IBM Product Recommendations User's Guide

Contents

Acoustic Digital Recommendations Overview

Acoustic Digital Recommendations is the solution for both Acoustic Product Recommendations and Acoustic Content Recommendations.

Acoustic Product Recommendations uses site analytics, user behavior, wisdom-of-the-crowd algorithms, and product attribute rules to generate highly relevant product suggestions for your visitors. These suggestions can improve the customer experience by suggesting key accessories such as batteries, memory cards, and carrying cases, ensuring they have what they need. It also can increase the average order value of your website sales.

Acoustic Content Recommendations uses site analytics and content rules to suggest other information assets such as PDF white papers, links to discussion forums, recipes, and job aids. These suggestions can increase your ability to retain visitors for longer and keep them engaged.

Key features of Product Recommendations

Plan your implementation by understanding the most useful features in Product Recommendations.

Table 1. Key Features for Product Recommendations		
Feature	**Description**	**Refer to**
System overview dashboard	This feature provides an easy way to see all of the aspects of your recommendation strategy and quickly navigate to the appropriate pane to make any configuration changes.	"System overview dashboard" on page 92
Multiple recommendation types	Choose from: • Product-based recommendations • Category-based recommendations • Search term-based recommendations	"Offers" on page 6
Business rules	Digital Recommendations provides a user interface to create and manage rules that place further limits on recommendation output. Digital Recommendations supports exclusionary, de-emphasis, and promotional rules. You can visually build advanced and complex rules with the business rules interface.	"Apply business rules to offers by using the new rules interface" on page 23 "Apply business rules to offers by using the legacy rules interface" on page 54

Table 1. Key Features for Product Recommendations (continued)

Feature	Description	Refer to
Fallback recommendations	Behavior-based algorithms cannot generate recommendations for products to which the algorithms are not yet applied. When new products are introduced to the site, a mechanism is needed to provide a default and compelling set of recommendations. To manage this process, Digital Recommendations provides fallback recommendation processes.	"Recommendation plans" on page 75
Image-based recommendations	An image-based recommendation delivers recommendations as HTML images with attribute values like the product name. Each image provides a link to the product page on your website for that recommended item. The primary use for image-based recommendations is with email campaigns. This type of recommendation targets an item in the email message and then generates a list of recommended items when the email recipient opens the message.	"Image recommendations" on page 112 Using Digital Recommendations with LIVEMail in the Acoustic Digital Recommendations Configuration Guide
Individual visitor personalization	Digital Recommendations builds individual visitor profiles-based on historical and in-session data to automatically present each shopper with a unique set of recommendations. Even visitors who are not known receive highly relevant recommendations-based on Digital Recommendations wisdom-of-the-crowd algorithms.	"Recommendation plans" on page 75
Synchronization of personalization data across multiple devices	Digital Recommendations is able to associate the cookie data on your visitor's computer or other device to their registration ID. This process captures cookie data across multiple devices to use in personalization.	Product Recommendation Cookies in the Acoustic Digital Recommendations Configuration Guide

Table 1. Key Features for Product Recommendations (continued)

Feature	Description	Refer to
A/B testing	Digital Recommendations includes an A/B testing capability that is designed to run A, B, C, and D split tests to determine the effect of various Digital Recommendations settings onsite revenues and conversions. Digital Recommendations A/B testing can also be used to test alternative algorithm affinity weights, business rules, site zone locations (above or below the fold), and the number of recommendations that are delivered to a specific zone.	"A/B testing" on page 108
Preview	You can review the algorithmic and rules logic that is specified and applied to an offer to help you fine-tune or troubleshoot recommendations.	"Preview recommendations" on page 19
Reports	Two reports are available in the **Reports** menu: Zone Performance and A/B Test performance reports. Zone performance is a filtered version of the Product Report by Category and displays performance of the cross-sell parent and subcategories. A/B test performance reports on any active A/B test that is configured in the A/B test tool in Digital Recommendations.	"Reports" on page 95
Dashboards	Dashboards track the performance of active offers and A/B tests.	"Performance dashboards" on page 102
Integration with IBM® WebSphere® Commerce	Digital Recommendations version 9 and later is tightly integrated with WebSphere Commerce version 7 FP2 and later.	IBM WebSphere Commerce documentation.

Table 1. Key Features for Product Recommendations (continued)		
Feature	**Description**	**Refer to**
Tracking results with Acoustic Digital Analytics	You can use Digital Analytics to track offer results: • Top Line Summary report • Products report • Products Report Category Trending • Product Zoom • Report Segments	Acoustic Digital Analytics documentation.
Tracking results with Acoustic Digital Analytics Explore	Explore provides custom reports that you can use to analyze Digital Recommendations performance.	Acoustic Digital Analytics Explore documentation.
Integration with IBM Interact	You can deliver category top-seller recommendations from Digital Recommendations to IBM Interact.	IBM Interact documentation.

Overview of the User's Guide

The *Acoustic Product Recommendations User's Guide* is intended for users who access the product daily to perform these tasks:

The *Acoustic Content Recommendations User's Guide* is intended for users who access the product daily to perform these tasks:

• View dashboards
• View reports
• View zone performance
• Run A/B tests
• Preview recommendations
• Create and edit offers
• Define and change recommendation plans
• Define and change site zones
• Define image-based recommendations

User's guide assumptions

The Acoustic Digital Recommendations User's Guide assumes that you know whether you are using Flat File or Dynamic recommendations.

If you do not know, contact your Digital Analytics administrator or Digital Analytics Customer Support. Refer to "Additional contact information" on page 119.

For more information, see the DigitalRecommendations/ProductRec_ConfigGuide_map.ditamap.

Access Legacy Digital Analytics products

You can access Legacy Digital Analytics products directly or from another Digital Analytics application.

If your account is enabled for Acoustic Digital Data Exchange Acoustic AdTarget Acoustic Digital Analytics Acoustic Digital Analytics Benchmark Acoustic Search Marketing Acoustic Digital Analytics Explore Acoustic Digital Analytics Export Acoustic Digital Analytics Import Acoustic Digital Recommendations Acoustic LIVEmail Acoustic Digital Analytics Monitor Acoustic Marketing Center Acoustic Digital Analytics for Social Media Acoustic Digital Analytics Enterprise Dashboard, you can access it in two ways:

- If you are already logged in to an Acoustic Digital Analytics application, click **Digital Data ExchangeAdTargetDigital AnalyticsBenchmarkSearch MarketingExploreExportImportRecommendationsLIVEmailMonitorMarketing CenterSocial AnalyticsEnterprise Dashboard** in the header navigation menu. The application opens and you are automatically authenticated.

- Go to the URL your organization was given when your account was set up. On the **Log In** page, enter your client ID, user name, and password, and then click **Log In**.

  If you do not know the URL, contact Acoustic Software Support.

User group permissions

If you have administrator access, you grant access permissions to Digital Recommendations through user group settings. To enable Digital Recommendations for all users that are assigned to a specific user group, navigate to the **Admin** > **Manage Groups** page. Select a user group and check the **Digital Recommendations** check box. After you save those changes, all members of that user group can access Digital Recommendations using either direct authentication or the application toggle.

Workflow for configuring Product Recommendations

Follow this workflow to configure Acoustic Digital Recommendations for your website that is used to sell products.

1. Create an offer. Product Recommendations uses the offer settings to determine how the list of product recommendations is generated. Refer to "Offers" on page 6.

2. You can improve generated recommendations that are targeted toward more specific business goals. For example, you do not want to recommend products that you do not have in inventory. Or, you do not want to offer products that are already top sellers on your website so you can focus on offering products that aren't selling as frequently. To create these improvements to your offers, you create business rules. Refer to "Apply business rules to offers by using the legacy rules interface" on page 54 or "Apply business rules to offers by using the new rules interface" on page 23.

3. Create a recommendation plan. Product Recommendations uses the recommendation plan settings to identify how the target products are selected. The target product is what the recommendations are based on. For example, if you want to recommend a pack of thermal socks on the detail page for a hiking boot, the hiking boot is the target and the pack of thermal socks is the recommendation. Refer to "Recommendation plans" on page 75.

4. Identify the location on your website that the recommendations appear. The following are common examples of zones:

   - The left side of the product detail page
   - The bottom of the shopping cart page
   - The right side of the checkout page

   Refer to "Configuring Site Zones" on page 83.

5. View what recommendations are generated for your targets. These recommendations help you determine whether changes are needed to the offer, the business rules, the recommendation plan, or the zones. Refer to "Test recommendations and rule output" on page 89.

6. When you are satisfied with the targets and recommendations, you can activate the offer. Refer to "Activate an offer" on page 15.

7. To view the impact Product Recommendations has on your site performance, view the reports. Refer to "Reports" on page 95

8. To help you interpret the report information, or to extract specific information from the reports, view the standard dashboard or create a custom dashboard. Refer to "Performance dashboards" on page 102

9. View a summary of your configuration components and their relationships, open the system overview dashboard. You can also change your configuration components from the system overview dashboard. "System overview dashboard" on page 92.

Note: If your setup is configured to support them, you can create image-based recommendations that generate lists of product images to be used in your email messages. Refer to "Configure image recommendations" on page 114.

Offers

Understand the types of offers you can use to generate product recommendations.

An offer is a set of parameters that generates product recommendations. It includes all parameters that identify which products (targets) you are generating product recommendations for and how these recommendations are generated. You can generate recommendations for each target individually. You can generate recommendations that are based on the product categories. You can generate recommendations that are based on search results.

Key features that you can implement with offers:

Table 2. Offer types		
Feature	**Description**	**Refer to**
Product Cross-Sell Offer	This offer is the most commonly used offer type. You can use it to recommend products that are based on your target product's individual product ID. This offer type gives you the most flexibility in creating business rules to promote and exclude products. You can customize the recommendation algorithm with affinity weights. Affinity weights control the weighting of four key data points in the product cross-sell algorithm. With this feature, you can tune the algorithm to address a range of customer behavior patterns and product mixes. You can also alter the output to address different styles of recommendations.	"Creating an offer" on page 8 "Determine the product cross-sell algorithm" on page 11
Site Category Offer	This offer type generates recommendations that are based on the category that your target product is associated with. You can use any category or subcategory that is defined in your Category Definition File. You can specify the key categories of products to be represented as overall top-sellers.	"Creating an offer" on page 8 "Rank products for recommendation" on page 12
EPR Category Offer	This offer type generates recommendations that are based on the category that your target product is associated with. You can use any category or subcategory that is defined in your Enterprise Product Report (EPR) product file. You can specify the key categories of products to be represented as overall top-sellers.	"Creating an offer" on page 8 "Rank products for recommendation" on page 12
Attribute Offer	This offer type generates top selling recommendations that match a combination of attributes. You can configure a combination of attributes. For example, Brand and Size, which generates recommendations for each brand-size combination, such as top selling products of Brand A-small and top selling products from Brand A-large.	"Creating an offer" on page 8 "Configure target ID generation for attribute offers" on page 10

Table 2. Offer types (continued)

Feature	Description	Refer to
Search Offer	This offer type generates recommendations from data that is collected from page view tags and search phrase parameters. Search phrases that are used by shoppers during a session are associated with the products that are viewed and bought during the same session	"Creating an offer" on page 8 "Identifying a set of targets by using a search term" on page 26

Creating an offer

Create an offer that is used to generate product recommendations.

Procedure

1. Click **Offer Actions** and select **Create New Offer**.
2. Type a name for the offer.
3. Select the offer type.
4. See the related concepts in the list that follows this procedure for configuring the components of each type of offer.
5. Save the offer.
6. Add rules to further qualify recommendations. See "Apply business rules to offers by using the legacy rules interface" on page 54 or "Apply business rules to offers by using the new rules interface" on page 23.

Related concepts

"Activate an offer" on page 15
After you configure an offer, you activate it.

"Identify targets" on page 9
A target product is the product on which recommendations are based. You identify how Product Recommendations selects these targets.

"Identify target exclusions" on page 10
You can exclude products from the list of targets.

"Configure target ID generation for attribute offers" on page 10
Use Target ID generation to specify the attributes to use to generate recommendations.

"Determine the product cross-sell algorithm" on page 11
The product cross-sell algorithm determines how user behavior is factored into product recommendations.

"Rank products for recommendation" on page 12
Use the ranking function to recommend products for site category (CDF) and EPR category offers based on how they rank in one of several categories.

"Virtual categories" on page 13
Virtual categories make sure that product sales are reported with the original category of the product.

"Determine delivery options" on page 14
You can define how you deliver data for generating recommendations and how those recommendations are delivered to your site.

"Determine the data analysis time period" on page 13

You can alter the data analysis time period to consider more or less data when recommendations are generated.

"Update frequency" on page 14
You can indicate how frequently offers are updated with behavior data and business rules.

"Preview target list" on page 15
You can use a preview target list to specify the items that you want to include in your preview recommendations.

"Enable email notification" on page 15
You can identify who can be notified when offers are updated.

"Apply business rules to offers by using the legacy rules interface" on page 54
If your offers need to be fine-tuned to include, exclude, promote, or de-emphasize products, use business rules.

"Preview recommendations" on page 19
Digital Recommendations provides a preview capability that delivers visibility into, and control over, the recommendations that are deployed for an offer.

"Test recommendations and rule output" on page 89
You can avoid unexpected results by testing your rules before you put them into production.

Related tasks
"Deciding which rules interface to use" on page 9
When you create an offer, there is an option for you to enable the rules interface.

"Enabling a recommendation fallback" on page 15
You can specify an EPR category offer to generate additional recommendations if your offer does not successfully generate enough recommendations.

Deciding which rules interface to use

When you create an offer, there is an option for you to enable the rules interface.

About this task
This interface is a drag-and-drop interface that simplifies the task of creating business rules. This interface also gives you more options in creating rules. When you create a new offer, use the rules interface.

Identify targets

A target product is the product on which recommendations are based. You identify how Product Recommendations selects these targets.

When you create a product cross-sell offer, you first define how Product Recommendations selects products (targets) to generate recommendations for.

For all options in the **Identify Targets** function, products must be active to display as targets or recommendations.

An active product is any product that receives at least five views during the Data Analysis Time Period for offers with an update frequency of Daily or Weekly. For offers with an Update Frequency of Monthly, products must receive 10 views to be considered active.

Most organizations select **All Active Products** and build category-specific rules to manage how recommendations are derived by department.

However, some organizations with large websites and multiple departments create offers scoped to the needs of each department. This practice allows merchandisers of a particular department to individually

create and manage offers and rules for their department without effecting the needs, settings, and rules relative to other departments.

Note: These settings do not constrain what products are recommended. Rather, they identify what products are selected as targets for recommendation. To place extra controls and constraints on the recommendations that are generated for targets, see "Apply business rules to offers by using the legacy rules interface" on page 54.

Identify target exclusions

You can exclude products from the list of targets.

Use this function to exclude product targets from recommendation.

Digital Recommendations does not generate recommendations for the products in this list. For product cross-sell offers, the list you specify here restricts the targets that are generated by the **Identify Target** function.

Configure target ID generation for attribute offers

Use Target ID generation to specify the attributes to use to generate recommendations.

You can specify up to six combinations of attributes. Each combination can contain either one EPR category plus up to five other attributes or contain up to six attributes.

Here are some examples:

Attribute combination	Results
Brand	Generates recommendations from each brand in your product set such as top selling Brand A product and top selling Brand B products.
Category + Brand	Generates recommendations from every category-brand combination such as: • Top selling Brand A coats • Top selling Brand B shoes
Category + Brand + Color	Generates recommendations from every category-brand combination for each color available such as: • Brand A red coats • Brand A white coats • Brand B brown shoes • Brand B black shoes
Gender + Brand	Generates recommendations from gender-brand combination such as: • Brand A Men's • Brand A Women's • Brand B Men's • Brand B Women's

Determine the product cross-sell algorithm

The product cross-sell algorithm determines how user behavior is factored into product recommendations.

Use the product cross-sell algorithm to determine how user behavior is factored into product recommendations.

Digital Recommendations is configured with three preset user behavior algorithms. These algorithms are found to be optimal to the associated page type. The following are the preset algorithms:

- Product page
- Cart page
- Order confirmation page

Each preset algorithm uses a combination of these affinities:

View-to-view
> Considers sessions in which visitors **view** the target product and **view** the recommended product in the same session. The Digital Analytics product view tag provides data for this affinity type. View-to-view provides the most data because visitors view more products than they purchase or add to the cart.
>
> **Note:** To ensure that there is data on which to base recommendations for low volume products, do not set this affinity to a value less than one.

View-to-buy
> Considers sessions in which visitors **view** the target product and **buy** the recommended product in the same session.

Buy-to-buy
> Considers sessions in which visitors **buy** the target product and **buy** the recommended product. The Buy-to-Buy affinity is calculated across multiple sessions for the data analysis time period.
>
> **Note:** This affinity type considers cross-session data during the data analysis time period of the offer. For example, a visitor purchase an MP3 player on Monday and came back to buy the high performance headphones on Thursday. Digital Recommendations relates these activities as part of this affinity.

Abandon-to-buy
> Considers sessions in which visitors **abandon** the target product and **buy** the recommended product in the same session.
>
> **Note:** To ensure Digital Recommendations has data from which to base recommendations for low volume products, do not set this affinity to a value less than one.

To use a preset affinity, click the affinity name. After you select an affinity, you can adjust it with the sliding bar. To restore the settings back to the present affinity, click the affinity name.

What product affinity numbers mean

The actual numeric values that are displayed for the individual affinity scores have no real meaning when they are viewed by themselves. They are numbers that correspond to conditional probabilities compared to each other or across products.

For example, if you have a target with a view-to-view affinity set to 40 and view-to-buy affinity is set to 10, it means that Digital Recommendations uses the view-to-view user behavior 4 times more often that the view-to-buy behavior when determining products to recommend.

Affinity weights are not percentages. They do not need to add up to 100. They are values that you supply to the statistical model to indicate the importance of each affinity type relative to the others in the context of the result you are trying to achieve. Setting each affinity type to 1 has the same result as setting each affinity type to 100. More typically, the weights that you give to the affinity types are not all the same, because they do not all contribute equally to the result.

If you need to modify the default settings of the recommendation algorithm for an offer, open the offer, and then from the **Settings** tab, click **Modify Algorithm**.

Do not set affinity to zero

If you set the weight for an individual affinity type to 0, its effect on the calculation of the final Product Affinity Index is minimized. Recommendations based on that affinity display only if there is no data from the other affinity types. It is not recommended to set an affinity weight to 0. It is a best practice to keep at least some data from each affinity type open so that products that receive minimal site interactions are given as much data as possible on which to base recommendations.

Rank products for recommendation

Use the ranking function to recommend products for site category (CDF) and EPR category offers based on how they rank in one of several categories.

Item Revenue
Generates recommendations based on the total revenue that is generated by the sale of items.

Quantity Sold
Generates recommendations based on the number of items sold.

Number of Views
Generates recommendations based on the number of times items that viewed in distinct sessions. Use this value if you do not have enough website purchase activity to generate meaningful recommendations. For example, if your customers shop online, but purchase offline. There is always more view activity than purchase activity.

Custom
Generates recommendations based on a calculation that includes all three of these metrics. When you select this ranking method, you supply a **Weight** for each of the metrics to define its relative importance. The three weight values that you enter must add up to 100%. Digital Recommendations uses the weights in the top seller ranking computation as follows: (Item Revenue * weight) + (Quantity Sold * weight) + (Number of Views * weight)

Minimum Value
Recommendations are not included if their ranking is less than this minimum value.

- For ranking based on item revenue, enter the minimum acceptable revenue amount.
- For ranking based on quantity of items that are sold, enter the minimum quantity.
- For custom ranking, you specify the minimum that must be met for each metric.

Do not Recommend Top %
For every category, Digital Recommendations tracks up to 50 top selling items. This feature removes the top percentage, specified by you, of the highest selling items from these recommendations. For example, if there are 50 items or more sold in each category during the data analysis time period, there are a maximum of 50 items in the initial set of recommendations for every category. If this setting is set to 10%, the top five items are removed from each category. Many organizations believe that their top selling items sell regardless of merchandising placement. Removing the top sellers allows better movement of items that visitors might not find if these items are not presented as Category Recommendations.

Enable Overall Top Sellers
This setting is used to configure pages such as the home page, the **No Search Results** page, or the **Empty Cart** page. When you are rendering only overall top selling items, most products are in one dominant site category, which is not optimal. You can specify up to 15 key categories of products to be represented such that each defined category receives an equivalent number of recommendations. If you are not using overall top sellers, leave this box blank.

- The category values that you type in the text box **must match the category ID** value that corresponds to either the EPR or CDF hierarchy. You name Category IDs with only uppercase

letters. There must be a reference to a source in the ECDF or CDF file to determine this value. If this information is not available, contact Digital Analytics for assistance.

- As a default, recommendations are generated for categories in the order that the categories are entered into this entry field. For example, if categories are entered as WOMENS, MENS, PETS, FISHING, the first recommendation are from WOMENS, the second from MENS, the third from PETS, the fourth from FISHING, the fifth from WOMENS, the sixth from MENS, up to Recommendation number 20. Up to 20 recommendations are available in the candidate set for home page recommendations.
- To generate recommendations in random order, place "R" as a fourth parameter in the `cmRecRequest` function to show different content that is interesting to visitors.

Virtual categories

Virtual categories make sure that product sales are reported with the original category of the product.

This function applies only to site category offers. Use it to ensure that product sales are reported with the original product category rather than the virtual category. For example, if your CDF file contains "sale" as a virtual category and you have "women's shoes" associated with that category, you list "sale" in the **Virtual Category** field. Doing so ensures that when women's shoes are sold, it is reported under the "women's shoes" category rather than "sale" virtual category.

Select only the virtual categories that are defined in the CDF.

Enter up to 10 virtual categories with each category followed by a return character.

If the website has more than 10 virtual categories, use the Product Category report to determine the top 10 virtual categories that are ranked by total sales to sufficiently redistribute sales for site category top sellers.

If numerous virtual categories contain the same term such as "Search", "Guided Search" or "onsite Search", use a wildcard parameter and capture all three of these examples with one of the available 10 entries. "%Search" means the virtual category must end with "Search". "%Search%" means must contain "Search". "Search%" means begins with "Search".

Determine the data analysis time period

You can alter the data analysis time period to consider more or less data when recommendations are generated.

With longer data analysis time periods, Digital Recommendations considers more data, which generally results in a higher number of recommendations for a higher number of targets. Shorter data analysis time periods reflect changes in buyer purchase preferences and seasonality more rapidly. Specify a data analysis time that is long enough to accumulate search phrase-based browsing activity. You can also select the smallest data analysis time period that provides the greatest number of targets. For further assistance, contact a Digital Recommendations client consultant. Longer data analysis time periods can be requested and configured by Digital Analytics as a system setting.

For product cross-sell offers:

- The **Session Based** value sets the number of days of data to process **View-to-View**, **View-to-Buy**, and **Abandon-to-Buy** behaviors.
- The **Registration Based** value sets the number of days of data to process the Buy-to-Buy affinity.
- Specify longer data analysis time periods for **Registration Based** than for **Session Based** because it takes more time to accumulate data.

Testing for the Optimum Time Period

To determine the optimum data analysis time period for your offer, test offers that look at different time periods. You can create three offer exports. Set one for seven days, one for 14 days, and one for 45 days.

When the files finish processing, pick them up from the SFTP server, save them to your hard disk, and open them in Excel. Count the number of rows in each file. Compare this number to the total known number of active targets currently available for sale on your website. Generally, you select the smallest data analysis time period that provides the greatest number of targets.

Determine delivery options

You can define how you deliver data for generating recommendations and how those recommendations are delivered to your site.

- **Flat File** : select this option to receive recommendation data with flat files. Then, specify the following options:

  - **Number of Recommendations**: The number of recommendations that are requested for each target. If you get fewer recommendations than the number specified here, other settings can be a factor: Data Analysis Time Period, the floor for active targets, and the volume of traffic on your site. You might need to **Enable Recommendation Fallback** to avoid having too few recommendations.

  - **Enable Recommendation Fallback**: Enables category fallback recommendations. If Digital Recommendations does not generate enough recommendations to fulfill the **Number of Recommendations** value, the top selling items in the target's defined EPR category are used to complete the recommendation list.

  - **Export Destination**: The configured SFTP destination for Digital Recommendations offers.

  - **File Delimiter**: The character that is used to separate distinct data fields (columns) in the export file. Comma is the default field delimiter, but you can enter another character to use as the field delimiter. Enter \t to create a tab-delimited export file.

  - **File Format**: Select either a compressed file (.zip) or a text file (.txt) format.

- **Site Zone**: If you are not licensed for dynamic recommendations, this option is not available. The following are options for Site Zone:

  - **Send Master Offer File**: Enable this option to have the master offer file that contains all of the recommendations for an offer that is transmitted to the export destination. Send Master Offer File is intended for informational purposes only so that recommendation data can be easily inspected manually.

    - **Export Destination**: The configured SFTP destination for Digital Recommendations offers.

    - **File Format**: For Site Zone, only text file (.txt) format is available.

- **Fallback Processing Only**: enables the Offer and Rules Fallback process. Select this option if you are creating an offer for providing fallback options and there is no intent to display EPR category recommendations on the site. This option is only available for EPR category offers.

Note: If you selected to use the new business rules interface with this offer, the **Flat File** delivery option and the **Send Master Offer File** option are not available.

Update frequency

You can indicate how frequently offers are updated with behavior data and business rules.

This frequency corresponds to any email offers that are fed to the LIVEmail application, ensuring that the most recent recommendations are included in the email offers.

Unless you have few changes or low traffic on your website, set frequency to **Daily**. It is also important to set the frequency to **Daily** if any of the product information that is used in your business rules changes daily, such as price or inventory.

Enabling a recommendation fallback

You can specify an EPR category offer to generate additional recommendations if your offer does not successfully generate enough recommendations.

About this task

If you select a fallback offer, the rules you specify in the current offer will apply.

Procedure

1. Clilck **Enable Recommendation Fallback**
2. Select **Fallback Source Offer**. For best results, specify an EPR category offer for the **Fallback Source Offer**.

   If the current offer uses the new rules interface, select an EPR offer that also uses the new rules interface.

   If the current offer uses the legacy rules interface, select an EPR offer that also uses the legacy rules interface.

Preview target list

You can use a preview target list to specify the items that you want to include in your preview recommendations.

You can specify a list or enable the **Use the top 25 Target IDs as Preview Targets** option to allow Digital Recommendations to select the target IDs to use in Preview. For more information, see "Preview recommendations" on page 19.

Enable email notification

You can identify who can be notified when offers are updated.

Enter a comma-delimited list of email addresses of people to notify when the offer updates are complete. If you are delivering recommendations from site zones, the underlying behavior data and business rules finished processing. Processes run following this notification to prepare offers for customer access. This access can take an extra 15 - 60 minutes, depending on your catalog size and offer volumes.

Activate an offer

After you configure an offer, you activate it.

Before an offer can generate recommendations, you must activate it.

Click **Offers** to display the offer list. Then, from the list, click the green button next to the offer to activate it.

Digital Recommendations processes offers early in the morning of the day that is specified on the **Offer Settings** tab of the offer. For example, if the settings for the offer are to run on Sunday, processing will begin early Sunday morning your local time. Digital Recommendations files are usually processed and complete by 8 AM your local time, however depending on data volumes this might take longer.

If it is absolutely critical that you receive recommendations at 5 AM on a given day, the Digital Recommendations file can be set up to be delivered the day before ensure that your deadline is met. Review this process with your IT team.

Note: You can only activate one EPR category offer and one site category offer.

Adding more top sellers for recommendation

You can use an attribute to represent groupings of products that span multiple categories.

About this task

If your categories are candles, cake toppers, and tablecloths, you can also use another grouping concept like "holiday" or "season." In this example, you would likely want the recommendations for birthday candles to include top-selling items from the candles category and top-selling cake toppers for birthday cakes and tablecloths for birthday parties.

If your website uses a secondary grouping or sorting construct in addition to categories and you want to include top-selling items that are based on those organizational elements in your category top seller recommendations, complete the following steps.

Note: This procedure applies only to EPR category offers.

Procedure

1. Create a product attribute that represents the concept. For example, "holiday" or "theme" or "season". The values that are held by this attribute must not exactly match any of your categories.

2. Populate the column with appropriate values for each product. As with any other attribute, use the vertical bar character (|) to separate multiple items.

   To continue with the birthday candles example, say that the attribute is named Theme. You might set the attribute as follows:

   - Birthday candles: Theme= birthday
   - Cake toppers: Theme = birthday|fiesta
   - Tablecloth: Theme = birthday|Spring

3. Upload the data

4. Map the new field by using **Admin > Extra Fields**.

5. Create or open an EPR category offer. From the **Settings** tab, click **Advanced Options**.

6. Navigate to **Optional Top Sellers by Attribute** and select the category or attribute combination you want to be processed as top sellers in the category offer. If you implement the previous example, you would add the Theme attribute.

   - If you create a row with a single attribute, then any product that has a value for that attribute is considered by the top seller algorithm.
   - If you create a row with a combination of attributes, it is an AND condition. Only those products that have values for all the attributes in the row are considered.
   - You can create up to four combinations.

7. Click **Apply**.

Generating recommendations for items in multiple categories

You can recommend items that are in multiple categories as top sellers in each of their alternative categories, and those alternative categories can receive recommendations.

About this task

Acoustic Digital Analytics can enable a category offer to recommend top sellers for the alternative categories that are provided in the Enterprise Product Content Mapping File.

When you enable this setting, every alternative category has top sellers that are recommended for it. The items that are associated in the Enterprise Product Content Mapping File with the alternative categories are potential recommendation candidates.

Note: This procedure applies only to EPR category offers.

Procedure

1. Create a product attribute that represents the alternative category such as "Sale," "Clearance," or "Plus Size."

   Make sure that the alternative category does not exactly match any of the existing categories.
2. Populate the column with appropriate values for each product. As with any other attribute, use the vertical bar character (|) to separate multiple items, such as Sale|Clearance|Plus Size
3. Upload the data.
4. Map the new field by using **Admin > Extra Fields**.
5. Create or open an EPR category offer. From the **Settings** tab, click **Advanced Options**.
6. Navigate to **Optional Top Sellers by Attribute** and select the category or attribute combination you want to be processed as top sellers in the category offer.

   - If you create a row with a single attribute, then any product that has a value for that attribute is considered by the top seller algorithm.
   - If you create a row with a combination of attributes, it is an AND condition and . Only those products that have values for all the attributes in the row are considered.
   - You can create up to four combinations.
7. Click **Apply**.

Viewing the change history for a specific offer

You can review a history of all changes that are made to an offer's settings and rules.

Procedure

1. Click **Offers**.
2. Click the name of an existing offer.
3. On the upper right corner of the main page, click **Change History**. A window lists all changes that are made to offer settings and rules, from most recent to earliest.
4. To review more details for a change, click an item on the list. The specific fields that changed and the old and new values are shown at the bottom of the window.

Previewing the results of an offer

You can use the **Rules Statistics** tab to preview the recommendations that are generated by an offer.

About this task
After you activate an offer and the offer processes, you can view the results of the offer by viewing the rule statistics. Rule statistics can assist you in troubleshooting and in improving your rules processes.

Procedure

1. Ensure that the offer you for which want to view the statistics for is active.
2. Open the offer for which you want to preview the results.
3. Click the **Rules Statistics** tab.

Track changes to configuration parameters

You can track changes that are made to offers and offer configurations

Tracking changes to offers and offer configurations

You can review a historical list of changes that are made to offers, attributes, and settings.

Procedure

1. Click **Manage** in the side navigation.
2. Click **Change History** in the side navigation. A list of all changes that are made, from most recent to earliest, displays at the top of the page.
3. To review more detail for a specific change, click the change. At the bottom of the page, the Change History report displays the specific fields that are changed and their old and new values.
4. To limit reported values, use the **Filter by** list to select a value, enter a complete or partial item or user name, then click **Apply**. The report displays only items that match the supplied text.

Viewing the change history for a specific offer

You can review a history of all changes that are made to an offer's settings and rules.

Procedure

1. Click **Offers**.
2. Click the name of an existing offer.
3. On the upper right corner of the main page, click **Change History**. A window lists all changes that are made to offer settings and rules, from most recent to earliest.
4. To review more details for a change, click an item on the list. The specific fields that changed and the old and new values are shown at the bottom of the window.

Tracking changes to attributes

You can review a historical list of changes that are made to attributes individually.

Procedure

1. Click **Manage**.
2. Click **Offer Configuration**.
3. To view changes that were made to product attributes, select **Product Offers** > **Attributes**
4. Do one of the following actions:

   - To view changes that were made to page attributes, select **Content Offers** > **Page Attributes**
   - To view changes that were made to element attributes, select **Content Offers** > **Element Attributes**

5. Click **Change History** in the main page.
6. To review more detail for a specific change, click the change. At the bottom of the window, the Change History report displays the specific fields that were changed and their old and new values.

Tracking changes to more settings

You can review a historical list of changes that were made to More Settings for offers.

Procedure

1. Click **Manage**.
2. Click **Offer Configuration**.
3. To view changes that were made to product-more settings, select **Product Offers** > **More Settings**
4. To view changes that were made to page attributes, select **Content Offers** > **More Settings**
5. Click **Change History** in the main page.
6. To review more detail for a specific change, click the change. At the bottom of the window, the Change History report displays the specific fields that were changed and their old and new values.

Preview recommendations

Digital Recommendations provides a preview capability that delivers visibility into, and control over, the recommendations that are deployed for an offer.

Using preview, you can see exactly how candidate recommendations for a target are ranked based on parameters that are defined for the offer. Preview shows you how specific candidates are excluded, promoted, or de-emphasized based on the business rules for the offer and which recommendations apply after the affinity algorithm. Preview also indicates the recommendations that are fallback recommendations.

Use the preview feature to gain insight into the effect of the rules and logic that are specified for an offer, especially if recommendations for a target do not meet your expectations. Or, to test an offer before you activate the offer.

Digital Recommendations provides three ways to preview recommendations for an offer:

• Specified target

• Sampled target

• Custom

The first two ways of previewing recommendations are dynamic: they present the actual output that is available immediately from the Content Delivery Network (CDN) for an offer. These previews are only available if your site is licensed for the Digital Recommendations dynamic recommendations feature. These previews display new, current content each time you request them.

The last type of preview is Custom. Custom previews are available to all Digital Recommendations sites: these previews perform real-time computations to report the recommendations you can expect to display based on the current business rules that are defined for an offer. You can save custom previews for future review and reuse.

You can also use the Rules Statistics to test the effect of rules on an offer. See

Previewing recommendations for a specific item

Use the specified target preview to find out exactly what the recommendation output available from the CDN is, right now, for a specific offer and target ID.

About this task

This preview can include all of the attributes and values that are included in the recommendations file, or a subset of them. Use the **Preview Options** feature to select the attributes to include.

Note: For an attribute to be displayed on this type of preview, it must be in both the recommendations file and the list of attributes that are specified as **Preview Options**.

To produce a preview for a specified target:

Procedure

1. Click **Preview**
2. Click **Preview Options** to review or change the attributes to include. See"Selecting attributes to display in previews" on page 22.
3. Click the current set of recommendations for a specified target link.
4. Select an offer.
5. Enter a specific target ID.
6. Click **Submit**.
7. You can view the resulting recommendation data in a grid or in a simulated site zone.

   - To view the preview in grid (table) format, click the **Grid View** tab.
   - To view the preview as a series of images in a site zone, click the **Picture View** tab.

Previewing recommendations for a sample set of item

You can use the sampled target preview to discover output that is available from the CDN for an offer and a sample set of targets.

About this task

Sampled target previews are dynamic: they present the actual output that is available immediately for an offer and present new, up-to-date content each time you request them.

You define the sample set of targets to use for this type of preview on the **Settings** tab for each offer. You can select either the top 25 targets based on item views or specify a list of target IDs.

Sample target previews include all attributes and their values for the targets and candidates, or you can select a subset of attributes. This preview also includes a comprehensive rules analysis. For information about analyzing the rules, see "Test recommendations and rule output" on page 89.

To produce a preview with a predefined sample set of targets:

Procedure

1. Click **Preview**.
2. Optionally, click **Preview Options** to review or change the attributes to include. See "Selecting attributes to display in previews" on page 22.
3. Click the **Current recommendations for sampled targets with detailed tracing** link.
4. Select an offer.
5. Click **Submit**.

6. You can view the resulting preview in a grid or in a simulated site zone.

   - To view the preview in grid (table) format, click the **Grid View** tab.
   - To view the preview as a series of images in a site zone, click the **Picture View** tab.

Previewing recommendations for new or modified offer

You can use custom previews to help you understand how changing the business rules of an offer results in differing recommendations.

About this task

Custom previews are available to all Digital Recommendations sites. These previews perform real-time computations to report the recommendations you can expect to appear based on the current business rules that are defined for an offer. Because they contain static data, you can save custom previews for future review and reuse.

The custom preview is an analytical tool for testing recommendation output for a new or newly modified offer. This preview type does not request data from the CDN, but instead performs all computations in real time to produce a set of recommendations. Because custom previews process against the Digital Recommendations rules engine and database, the request can take some time to complete. Custom previews can include all item attributes and their values for all target and candidate items, or you can select a subset of attributes to include.

Note: For new offers, the recommendation preview is only available after the base recommendations are assembled and the rules are applied. This typically occurs early every morning, so the preview is available the day after changes are made.

Note: For changes to existing offers, changes to rules are available immediately. However, if you change the affinity settings for an existing offer, the preview is not available until the day after changes are made.

Note: For changes to existing offers, changes to rules are available immediately.

Procedure

1. Click **Preview**.
2. Optionally, click **Preview Options** to review or change the attributes to include. See "Selecting attributes to display in previews" on page 22.
3. Click **Create New Preview**.
4. Enter an identifying name and select the offer.
5. Identify targets by either using the sample set that is defined for the offer (as for a sampled target preview) or entering one or more specific target IDs.
6. Click **Save and Submit**.
7. You can view the resulting preview in a grid or as a series of pictures in a simulated site zone.

   - To view the preview in grid (table) format, click the **Grid View** tab.
   - To view the preview as a series of images in a site zone, click the **Picture View** tab.

8. To review the custom preview later, click **Preview** then click the linked name of the preview. You can change the offer or the targets on the **Setup** tab and rerun the preview, or click the **Grid View** or **Picture View** tab to review previously generated recommendations.

Previewing by using a grid

You can preview the recommendations for an offer in a grid, and optionally download the data for use in spreadsheets or other files.

About this task

Procedure

1. Click **Preview**.
2. Create a preview of any type or click a saved custom preview.
3. Click the **Grid View** tab. Each of the targets that you specify for your preview displays on a single line.
4. Click the **+** icon for a target to view all of its candidate recommendations, and whether each one was included or excluded. The business rules that are invoked for the candidates also display.
5. Optionally, click **Download**. The standard Download dialog box opens.

Previewing as images in a zone

You can preview recommendations for an offer as images in a simulated site zone.

About this task

Note: To enable this feature, the Enterprise Product Content Mapping File must include the URL for thumbnail images as an item attribute. You must also identify which of the attributes contain this thumbnail by clicking **Manage > Offer Configuration > Attributes** and selecting the **Attribute containing Image URL**.

Procedure

1. Click **Preview**.
2. Create a preview or select a saved custom preview.
3. Click the **Picture View** tab. An image (if available) for the first target displays at left, and a simulated site zone with its candidate recommendations at right. A notation beneath each image indicates whether the candidate was included or excluded.
4. To review attribute values for a target or candidate, rest the cursor on the image. The attributes and values display until you move the cursor off the image.
5. To view the page on the client site where the image is displayed, click the image. The client page displays in a new window.
6. To scroll through more candidates, click the right arrow.
7. If your preview contains more than one target, click the name of each one to view the images and attributes of its candidate recommendations.

Selecting attributes to display in previews

You can customize the information reported by your previews. You select the attributes to include, then create your preview.

About this task

Specified target previews include only attributes and values that are in the recommendations file. For an attribute to appear on this type of preview it must be in both the recommendations file and the list of attributes that you select.

Procedure

1. Click **Preview**.
2. Click **Preview Options**.
3. Click **Product Offer**.
4. Click the type of offer (**Page View Offers** or **Element Offers**)
5. To add an attribute to your previews, click the name of the attribute in the **Available Attributes** list, then click **>**. To add all of the available attributes, click **>>**.
6. To remove an attribute that currently displays on your previews, click the name of the attribute in the **Selected Attributes** list, then click **<**. To remove all of the selected attributes, click **<<**.
7. To change the order in which attribute information displays, click the name of an attribute in the **Selected Attributes** list, then click the up or down arrow.
8. Click **Save**.

Apply business rules to offers by using the new rules interface

If your offers need to be fine-tuned to include, exclude, promote, emphasize, or de-emphasize products, use business rules.

Here are some examples of using business rules:

- Use category rules to prevent men's products from appearing in the women's department.
- Use inventory rules to prevent recommending out-of-stock items.
- Use price rules to facilitate up-selling and down-selling.
- Use margin rules to eliminate low margin items.

Rules are based on data that is provided to Digital Analytics by using an import file. Available rules depend on the offer type.

Exclusionary rules
 Exclusionary rules eliminate items from recommendations that are based on defined criteria. For example, exclusionary rules are expressed as "Exclude recommendations where the Inventory of the product is less than 10.

De-emphasis rules
 De-emphasis rules, rather than excluding, move recommendations to the back of the candidate list. For example, if a product has low margins but is ranked as having high relevance, a de-emphasis rule that moves that product to the back of the list of valid recommendation candidates and moves the higher margin items forward. If there is limited recommendation data for a specific target or when all recommendations are low margin, then data is still available to present to the visitor.

Promotional rules
 Organizations that are introducing new products or articles or that have items with high inventory can set up promotions that insert designated products in front of behavioral recommendations. You can create promotional rules to prioritize manually designated products over recommendations from Digital Analytics. Digital Recommendations can help you. You can set a percentage weight that says "Display these two products in the first position for 50% of the products in the Men's department".

Emphasis rules
 You can use emphasis rules to move recommendations to the beginning of the candidate list. For example, if a product has high margins but is ranked as having a lower relevance, an emphasis rule moves that product to the front of the list of valid recommendation candidates.

More about business rules for offers

- The business rules that you create for your offers are based on the (up to 50) attributes you provide in the ECDF and EPCMF data files. For information about these files, see the *ECDF and EPCMF data files* chapter in the Acoustic Product Recommendations Configuration Guide.

- Before rules are processed, Digital Recommendations generates recommendations based on the affinity weights that are set for an offer. Digital Recommendations attempts to generate up to 50 recommendations per target so that a large data set is available against which to apply rules. The ability of Digital Recommendations to generate recommendations is largely based on the data analysis time period and the degree of traffic that the site receives. To specify the number of final recommendations you want to receive, following these standards:

  - Specify up to 12 recommendations when you configure the site zone where the offer is used. If you need more than 12 recommendations, contact your Acoustic Digital Analytics client consultant.

- **Rule specificity**

  You create rules by using attribute values. The values that you enter in the rules interface **must exactly match** the values that are loaded by using the ECDF and EPCMF files. These values can include the use of spaces and capitalization.

  Business rule policy

  Governs the execution of all rules and cannot be specified by rule set or by an individual rule. For more information, see "Configure business rules policies for offers by using the legacy rules interface" on page 69 .

  Rules data

  Do not create rules on an active offer until all rule data is loaded into the Digital Analytics database. Rules that are created when rule data is not provided erroneously eliminates items and deliver an unexpected result. For example, rules data that is loaded into Digital Analytics on Tuesday by using the Enterprise Product Report or by using Product View Extra Fields, is available for processing on an Offer that is scheduled for Wednesday delivery.

Defining individual rule groups

Your first step in defining business rules is to create a rule group. Use this procedure to create a rule group that can be used only with the current offer.

About this task

When you have many rules, rule groups are convenient for grouping similar rules so they are easy to find. Rule groups also allow for multiple people to work on different rule groups at the same time for the same offer and manage rules independently.

After you create a rule group, you define one or more business rules in that group.

Procedure

1. Open the offer and then click the **Rules** tab.

2. Click **Add New Group** and provide a rule group name.

Defining shared rule groups

Your first step in defining business rules is to create a rule group. Use this procedure to create a shared rule group that can be used with any offer.

About this task

When you have many rules, rule groups are convenient for grouping similar rules so they are easy to find. Shared rule groups allow you to create a set of rules and use them with multiple offers, reducing the effort of duplicating rules for each offer.

After you create a shared rule group, you define one or more business rules in that group.

Procedure

1. Open the offer and then click the **Rules** tab.
2. Click **Add New Shared Group** and provide a rule group name.

Edit a rule in a shared group

When you edit a rule in a shared group, it affects all offers that use that rule group.

Converting an individual rule group to a shared rule group

You can convert a rule group that was originally created as an individual group to a shared group. This task is useful if you want to create a set of rules and test them before you create them in a shared group.

Procedure

1. Click the group name.
2. Click the copy icon. If you hover over the icons, it is labeled **Convert to Shared Group**.
3. You are prompted to type a name. You can give the group a new name or keep the existing name.

Copying a shared rule group into an individual rule group

You can make a copy of a shared rule group and create it as an individual rule group. This task is useful if you want to use a shared rule group as a starting point for creating another rule group.

Procedure

1. Click the group name.
2. Click the copy icon. If you hover over the icons, it is labeled **Copy Shared Group to Individual Offer Rule Group**.
3. You are prompted to type a name. You can give the group a new name or keep the existing name.

Creating a rule

After your rule group is created, create one or more rules in that rule group.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.

3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See <u>"Defining conditions to select rule targets" on page 26</u>

4. Define the rule using the **Promote**,**Exclude**, **Exclude All**, **Emphasize**, **De-emphasize**, or **De-emphasize similar** conditions.

5. Click**Save**.

Related concepts

<u>"Build rule queries" on page 27</u>
With the rules interface, you can use building blocks to create your rule conditions.

<u>"Promotions" on page 28</u>
Use promotion rules to place designated items at the beginning or end of the recommendation list that is generated by the parameters that are defined in the offer.

<u>"Emphasize items" on page 32</u>
Use emphasis to place designated items at the beginning of the recommendation list.

<u>"De-emphasize items" on page 35</u>
You can use de-emphasis to place designated items at the end of the recommendation list that is generated by the cross-sell algorithm that is defined in the offer.

<u>"Exclude items" on page 39</u>
You can use an exclude rule to remove items from the recommendation list that are generated by the cross-sell algorithm that is defined in the offer.

Related tasks

<u>"Defining conditions to select rule targets" on page 26</u>
You can limit the targets for which the recommendation rule applies.

Defining conditions to select rule targets

You can limit the targets for which the recommendation rule applies.

About this task

Targets are the items that you are generating recommendations for and are the items for which the rules apply. In some cases, you want a rule only to apply to targets that meet a specific condition.

For example, you might want to create a rule that applies only to a specific brand or category.

For example, you might want to create a rule that applies only to a page URL or category ID.

Procedure

1. Select **Apply this rule to targets matching the following conditions**.
2. Using the **Rule Query Building Blocks**, create the conditions to select targets.
3. You can build more complex conditions with the And Group and Or Group building blocks.

   With an **And Group**, you can apply multiple conditions that must all be met when you select targets. With an **Or Group**, only one of the conditions must be met when you select targets.

Example

To apply a rule only to targets of a specific brand (Brand X), use the **Brand** building block and specify **is** *Brand X*.

Identifying a set of targets by using a search term
When you create a search offer type, you can configure a rule so that only targets associated with the search term are used.

About this task

Procedure

1. Select **Apply this rule to targets matching the following conditions**.
2. From the list of **Target Query Building** blocks, drag **Search Term** to the query building block.
3. In the Edit Rule Criterion screen, select the comparison condition, such as **is** or **contains**.
4. Type the search term in the text box.

   You can add more search terms by using an **OR Group**.
5. Save the rule.

Build rule queries

With the rules interface, you can use building blocks to create your rule conditions.

When you select one of the following rule types, you use the items in the **Rule Query Building Blocks** to create your rule queries:

- Exclude
- Exclude all
- Emphasize
- De-emphasize
- De-emphasize similar
- Promote

In the simplest form, you can create a single condition by dragging and dropping a building block to the recommendation rule group. When you drop the building block, you are prompted for the comparison condition and the value to evaluate.

For example, if you want to exclude Brand X from recommendation, drag the **Brand** building block. When prompted to define the comparison condition, select **is** then type Brand X. The building block becomes **Brand is "Brand X"**.

You can also create more complex conditions with the **AND Group** and the **OR Group**.

For example, if you want to create a rule that excludes Brand X, but only from the clothing category, drag the **Brand** building block as in the previous example. Then, drag the **AND Group**. This action places the brand building block in a group. Drag the **Category** building block into the group. When prompted, select **Category is** and select the **Clothing** category.

Use a predefined date range in your rule

You can use predefined date ranges, such as a holiday season, summer, or other date range in which to apply a rule.

If you use a date-based rule such as today's date or valid date range, you can select **Use predefined date range**. With this option, you can select from date ranges you previously specified.

Related tasks

You can pre-define date ranges to capture meaningful time period such as holiday seasons or promotional seasons such as summer or fall.

Creating a pre-defined date range

You can pre-define date ranges to capture meaningful time period such as holiday seasons or promotional seasons such as summer or fall.

Procedure

1. Click **Manage** in the navigation pane.
2. Click **Date Ranges**.
3. Click **Add date range**.

4. Specify a name of the date range, such as Summer and specify the start and end dates. You can specify it for every year if you want it to repeat annually.

Promotions

Use promotion rules to place designated items at the beginning or end of the recommendation list that is generated by the parameters that are defined in the offer.

You have many options to use for promotion rules.

Promoting specific products

Use item promotions to place designated items in the recommendation list.

About this task

If you are introducing new products to market or you have items with high inventory, you can promote products by product ID in front of behavioral recommendations.

You also specify the percentage of times that the item is displayed at the beginning of the list and the date range of the promotion.

See also "Recommending items that are part of a set" on page 63.

To set up promotions for specific products:

Procedure

1. Click **Add rule** or open an existing rule to edit.
2. Select **Promote** from the drop-down list.
3. In the text field, specify the item IDs that you want to position before behavioral recommendations for the associated targets. **The characters in IDs must be entered as all uppercase letters**.

   Products listed here will be positioned in the order listed.
4. Check the **Apply Exclusionary Rules** check box if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.
5. Set the **Distribution parameters**
   - Distribution percentage allows you to control the percentage of associated targets for which the promotion applies. For example, if you specify the Brand A Camera as a promotion for all targets in the Camera department, you might not want to have this item show up on the website as the first recommendation for *every* product in the Camera department. If you set the Frequency Percentage to 25%, then the Brand A Camera is randomly inserted as the first recommendation for only 25% of the targets in the Camera department.
   - **Priority level** specifies how those conflicts are handled when multiple promotion rules conflict.
   - Promotion order
   - **Promotion Schedule**
6. **Save** the rule.

Promoting multiple items in a specific order

You can promote multiple items and specify the order that they are promoted in the recommendation list.

About this task

If you are introducing new items to market or you have items with high inventory, you can promote by item ID in front of behavioral recommendations and specify the order in which they are recommended.

You also specify the percentage of times that the item is displayed at the beginning of the list and the date range of the promotion.

Procedure

1. Click **Add rule** or open an existing rule to edit.
2. Select **Promote** from the drop-down list.
3. In the text field, specify the item IDs, one on each line. Items are recommended in the order they appear in the list.

    You can use ID groups (one group per line) to split the items in each group across targets. Each group of IDs is used as recommendations for an equal number of targets.

    Note: The characters in IDs must be entered as all uppercase letters.
4. Check the **Apply Exclusionary Rules** checkbox if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.
5. Set the **Distribution parameters**

    • You can control the percentage of associated targets for which the promotion applies by setting the distribution percentage. For example, if you specify an apple pie recipe as a promotion for all targets in the side-dish category, you might not want to have this item show up on the website as the first recommendation for *every* item in the side-dish category. If you set the Frequency Percentage to 25%, then the apple pie recipe is randomly inserted as the first recommendation for only 25% of the targets in the side-dish category.

    • You can control the percentage of associated targets for which the promotion applies by setting the distribution percentage. For example, if you specify the Brand A Camera as a promotion for all targets in the Camera department, you might not want to have this item show up on the website as the first recommendation for *every* item in the Camera department. If you set the Frequency Percentage to 25%, then the Brand A Camera is randomly inserted as the first recommendation for only 25% of the targets in the Camera department.

    • **Priority level** specifies how those conflicts are handled when multiple promotion rules conflict.

    • Promotion order

    • **Promotion Schedule**
6. **Save** the rule.

Promoting multiple groups of items - example
An example of adding two groups of item IDs for promotion.

About this task
If you use multiple groups, each group is promoted for an equal number of targets. In this example, there are two groups. The first target gets promotions from the first group. The second target gets promotions from the second group. This pattern continues for all targets.

Procedure

1. Type the item IDs into the text field.

2. To also promote items ABC123, ABC456, ABC789, for half of the targets, click **Add ID group** and type the item IDs into the next text field.

Results
Item IDs are recommended in the following order: ITEM123, ABC123, ITEM456, ABC456, ITEM789, ABC789

Promoting categories

Use category promotions to place items in specific categories in the recommendation list.

About this task

If you are promoting seasonal items, you can promote items by category and have them placed in the recommendation list, either before or after recommendations generated by the offer.

You also specify the percentage of times that the item is displayed at the beginning of the list and the date range of the promotion.

Procedure

1. Click **Add rule** or open an existing rule to edit.
2. Select **Promote** from the drop-down list.
3. In the text field, specify the category IDs, in parentheses. **The characters in IDs must be entered as all uppercase letters**.

   You can promote only the top-selling items in the category by using double parenthesis.
4. Check the **Apply Exclusionary Rules** check box if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.
5. Set the **Distribution parameters** to

   - You can control the percentage of associated targets for which the promotion applies by setting the distribution percentage. For example, if you specify the Brand A Camera as a promotion for all targets in the Camera department, you might not want to have this item show up on the website as the first recommendation for *every* product in the Camera department. If you set the Frequency Percentage to 25%, then the Brand A Camera is randomly inserted as the first recommendation for only 25% of the targets in the Camera department.
   - You can also control the percentage of associated targets for which the promotion applies by setting the distribution percentage.
   - **Priority level** specifies how those conflicts are handled when multiple promotion rules conflict.
   - Promotion order
   - **Promotion Schedule**
6. **Save** the rule.

Promoting with both item ID and category

Use promotions to place items in specific categories in the recommendation list.

About this task

You also specify the percentage of times that the item is displayed at the beginning of the list and the date range of the promotion.

To set up category promotions:

Procedure

1. Click **Add rule** or open an existing rule to edit.
2. Select **Promote** from the drop-down list.
3. In the text field, specify category IDs in parentheses and items ID without parentheses. **The characters in IDs must be entered as all uppercase letters**.

   You can promote only the top-selling items in the category by using double parenthesis.
4. Check the **Apply Exclusionary Rules** check box if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.

5. Set the **Distribution parameters** to

- You can control the percentage of associated targets for which the promotion applies by setting the distribution percentage. For example, if you specify the Brand A Camera as a promotion for all targets in the Camera department, you might not want to have this item show up on the website as the first recommendation for *every* product in the Camera department. If you set the Frequency Percentage to 25%, then the Brand A Camera is randomly inserted as the first recommendation for only 25% of the targets in the Camera department.

- You can also control the percentage of associated targets for which the promotion applies by setting the distribution percentage.

- **Priority level** specifies how those conflicts are handled when multiple promotion rules conflict.

- Promotion order

- **Promotion Schedule**

6. **Save** the rule.

Promoting a list of products using an attribute value

Use an attribute in the EPCMF to specify a list of products to recommend.

Before you begin

This procedure requires an understanding of the EPCMF file. Refer to *The EPCMF* in the *Acoustic Product Recommendations Configuration Guide*.

About this task

Use this feature to promote specific products using an attribute defined in the EPCMF file. This is useful if you want to promote a specific set of accessory products.

Procedure

1. Select an attribute in the EPCMF. In this field, add a list of product IDs you want to recommend. You can specify up to 10 item IDs, separated by the | character. For example: recID1 | recID2 | recID3 | recID4| recID5| recID6| recID7| recID8| recID9| recID10. Set the attribute values as in the following example:

Table 3. Example EPCMF entry					
File Date	**Client ID**	**Item ID**	**Item name**	**Item primary category ID**	**Static attribute *9***
...	...	*target item ID*	*target item name*	...	*recID1	recID2	recID3	recID 4| recID 5| recID 6| recID 7| recID 8| recID 9| recID 10*

2. Upload the EPCMF using Acoustic Digital Analytics Import.

3. From the left navigation, select **Manage** > **Product Offers** > **Attributes**

4. Find the Enterprise Product Static Attributes field that corresponds to the attribute you selected in the previous step (Static attribute 9).

5. Type a name for the product list in the **Alias** field, such as "related products."

6. Identify the data type as **Text**.

7. **Save**.

8. Create an offer or select the offer that you want to work with and open the Rules tab.

9. Click **Add rule** or open an existing rule to edit.

10. Select **Promote** from the drop-down list.

11. Select **Using an attribute** and select the Alias that you defined in this procedure from the list of attributes (related products).

12. Check the **Apply Exclusionary Rules** check box if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.
13. **Save** the rule.

When multiple promotion rules apply to a target

As you develop more business rules, you might find that multiple rules can affect the ordering of your recommendation list.

If you have multiple promotion rules that apply to a target, Digital Recommendations uses the following process to determine which promotion appears in the list:

1. The **Priority level** specified in the rule. Priority level 1 is the highest.
2. Rule type. Individual rules rate higher than shared rules.
3. How the product was added. Promotional products that were added by using the user interface rate higher than products added by using the EPCMF file.
4. Position of promotions relative to recommendations based on affinity. Promotions that are listed before recommendations chosen by affinity are rated higher than promotions that are listed after recommendations chosen by affinity.

Note: If there are still more than one equally ranked promotions, then the higher rating is selected randomly.

Emphasize items

Use emphasis to place designated items at the beginning of the recommendation list.

You have many options to use for emphasizing items.

Related concepts
"The percentage value" on page 32
Use the percentage value for emphasis and de-emphasis rules to recommend only a percentage of the items that match the rule conditions.

"The factor value" on page 33
Use the factor value for emphasis and de-emphasis rules to increase the affinity score of items that match the rules conditions.

Related tasks
"Emphasizing categories" on page 33
You can move items that are contained in one or more categories to the front of the recommendation list.

"Emphasizing specific items" on page 34
You can move one or more specific items to the front of the recommendation list.

"Emphasizing based on the value of an attribute" on page 34
You can move items to the front of the recommendation list by editing the rule criterion.

"Emphasizing by comparing attributes with the target" on page 34
You can move items to the beginning of the recommendation list by evaluating the value of a specified attribute.

The percentage value

Use the percentage value for emphasis and de-emphasis rules to recommend only a percentage of the items that match the rule conditions.

When you are creating emphasis and de-emphasis rules, you have a % of recommendations option. With this option, you can specify the percentage of matching recommendations that are used.

For example, if you want to limit a brand to only 50% of the recommendations, you can use an emphasis rule, but set the condition to Emphasize 50% of recommendations and leave factor empty.

If you do not want to use the percentage to alter the number of recommendations, use 100%.

The factor value

Use the factor value for emphasis and de-emphasis rules to increase the affinity score of items that match the rules conditions.

When you are creating emphasis and de-emphasis rules, you have a factor option. With this option, you can adjust how much emphasis to place on recommendations that match the rule conditions.

As part of the Digital Recommendations process, each recommendation is scored and ranked based on the strength of its affinity to the target.

Using the factor value with emphasis rules

When you use emphasis rules, you can use the factor value to increase the affinity score. The factor value increases how much items are emphasized. For example, if a recommendation has a score of 500 and you use a factor of 2, the new score is 500*2=1000. This can change the rank of the recommendation and move it further to the front of the recommendation list.

Using the factor value with de-emphasis rules

When using de-emphasis rules, you can use the factor value to decrease the affinity score. The factor value increases how much items are de-emphasized. For example, if a recommendation has a score of 500 and you use a factor of 2, the new score is 500 / 2=250. This can change the rank of the recommendation and move it further toward the end of the recommendation list.

When multiple factors affect a target/recommendation pair

There are three scenarios when multiple factors apply to a target recommendation pair.

Multiple emphasis rules

If you are using multiple emphasis rules that use the factor value, and a target/recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has two factor values that apply: 2 and 3, the resulting factor is 500*2*3= 3000.

Multiple De-emphasis rules

If you are using multiple de-emphasis rules that use the factor value, and a target/recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has two factor values that apply: 2 and 3, the resulting factor is 500/(2*3)=83.3.

Emphasis and De-emphasis rules

If you are using emphasis and de-emphasis rules that use the factor value, and a target/recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has 2 factor values that apply: emphasis of 2, de-emphasis of 3, the resulting factor is (500*2)/3=333.3.

The factor value that is required to change the rank of a recommendation is different for every offer, so you need to try multiple factors to get specific results.

Emphasizing categories

You can move items that are contained in one or more categories to the front of the recommendation list.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See and for information on other ways to use these values.
5. Drag the **Category** building block to the left. Refer to
6. Define the category in the **Category** building block.

7. **Save** the rule.

Emphasizing specific items

You can move one or more specific items to the front of the recommendation list.

About this task

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the Product ID Page ID or Element ID building block.
6. In the Edit Rule Criterion dialog, select **is in the following list**, type a description, then type one or more item IDs, separated by commas.
7. **Save** the rule.

Emphasizing based on the value of an attribute

You can move items to the front of the recommendation list by editing the rule criterion.

About this task

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Emphasize**. Select **Emphasize**. Set **%** to 100 and **factor** to 1. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the attribute that you want to exclude building block.
6. In the **Edit Rule Criterion** dialog, select **contains**, and type the value on which you want to evaluate the attribute.
7. **Save** the rule.

Emphasizing by comparing attributes with the target

You can move items to the beginning of the recommendation list by evaluating the value of a specified attribute.

About this task

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.

5. Drag the attribute building block that you want to emphasize.
6. Enable the **Compare to target** option.
7. In the Edit Rule Criterion dialog, select **contains**, and type the value on which you want to evaluate the attribute and click **Apply**.
8. **Save** the rule.

Emphasizing items that match a higher recommendation's selected attribute

You can compare a recommendation with another recommendation that is delivered within the same zone.

About this task

If a lower-ranked recommendation has one or more of the same attributes as a higher-ranked recommendation, the lower-ranked recommendation is moved to the end of the recommendation list.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Emphasize similar**.
5. Drag the attribute building block that you want to compare.
6. **Save** the rule.

De-emphasize items

You can use de-emphasis to place designated items at the end of the recommendation list that is generated by the cross-sell algorithm that is defined in the offer.

You have many options to use for de-emphasizing items.

Related concepts

"The percentage value" on page 32
Use the percentage value for emphasis and de-emphasis rules to recommend only a percentage of the items that match the rule conditions.

"The factor value" on page 33
Use the factor value for emphasis and de-emphasis rules to increase the affinity score of items that match the rules conditions.

Related tasks

"De-emphasizing categories" on page 37
You can move items that are contained in one or more categories to the back of the recommendation list.

"De-emphasizing specific items from recommendation" on page 37
You can de-emphasize one or more specific items from the recommendation list.

"De-emphasizing based on the value of an attribute" on page 37
You can move items to the end of the recommendation list by evaluating the value of a specified attribute.

"De-emphasizing by comparing attributes with the target" on page 38
You can move items to the end of the recommendation list by evaluating the value of a specified attribute.

"De-emphasizing items that match a higher recommendation's selected attribute" on page 38

You can compare a recommendation with another recommendation that is delivered within the same zone.

The factor value

Use the factor value for emphasis and de-emphasis rules to increase the affinity score of items that match the rules conditions.

When you are creating emphasis and de-emphasis rules, you have a factor option. With this option, you can adjust how much emphasis to place on recommendations that match the rule conditions.

As part of the Digital Recommendations process, each recommendation is scored and ranked based on the strength of its affinity to the target.

Using the factor value with emphasis rules

When you use emphasis rules, you can use the factor value to increase the affinity score. The factor value increases how much items are emphasized. For example, if a recommendation has a score of 500 and you use a factor of 2, the new score is 500*2=1000. This can change the rank of the recommendation and move it further to the front of the recommendation list.

Using the factor value with de-emphasis rules

When using de-emphasis rules, you can use the factor value to decrease the affinity score. The factor value increases how much items are de-emphasized. For example, if a recommendation has a score of 500 and you use a factor of 2, the new score is 500 / 2=250. This can change the rank of the recommendation and move it further toward the end of the recommendation list.

When multiple factors affect a target/recommendation pair

There are three scenarios when multiple factors apply to a target recommendation pair.

Multiple emphasis rules

If you are using multiple emphasis rules that use the factor value, and a target/recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has two factor values that apply: 2 and 3, the resulting factor is 500*2*3= 3000.

Multiple De-emphasis rules

If you are using multiple de-emphasis rules that use the factor value, and a target/recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has two factor values that apply: 2 and 3, the resulting factor is 500/(2*3)=83.3.

Emphasis and De-emphasis rules

If you are using emphasis and de-emphasis rules that use the factor value, and a target/ recommendation pair is affected by both rules, the factor values are combined. For example, if a recommendation has a score of 500 and has 2 factor values that apply: emphasis of 2, de-emphasis of 3, the resulting factor is (500*2)/3=333.3.

The factor value that is required to change the rank of a recommendation is different for every offer, so you need to try multiple factors to get specific results.

The percentage value

Use the percentage value for emphasis and de-emphasis rules to recommend only a percentage of the items that match the rule conditions.

When you are creating emphasis and de-emphasis rules, you have a % of recommendations option. With this option, you can specify the percentage of matching recommendations that are used.

For example, if you want to limit a brand to only 50% of the recommendations, you can use an emphasis rule, but set the condition to Emphasize 50% of recommendations and leave factor empty.

If you do not want to use the percentage to alter the number of recommendations, use 100%.

De-emphasizing categories

You can move items that are contained in one or more categories to the back of the recommendation list.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the **Category** building block to the left. Refer to "Build rule queries" on page 27
6. Define the category in the **Category** building block.
7. **Save** the rule.

De-emphasizing specific items from recommendation

You can de-emphasize one or more specific items from the recommendation list.

About this task

This rule type excludes items from being recommended; it does not exclude them from becoming targets for the offer.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the Product ID Page ID or Element ID building block.
6. In the Edit Rule Criterion dialog, select **is in the following list**, type a description, then type one or more item IDs, separated by commas.

   To de-emphasize items that are NOT in the specified list, select **is not in the following list**
7. **Save** the rule.

De-emphasizing based on the value of an attribute

You can move items to the end of the recommendation list by evaluating the value of a specified attribute.

About this task

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **De-emphasize**. Set **%** to 100 and **factor** to 1. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the attribute that you want to exclude building block.
6. In the **Edit Rule Criterion** dialog, select **contains**, and type the value on which you want to evaluate the attribute.

7. **Save** the rule.

De-emphasizing by comparing attributes with the target

You can move items to the end of the recommendation list by evaluating the value of a specified attribute.

About this task

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See "The percentage value" on page 32 and "The factor value" on page 33 for information on other ways to use these values.
5. Drag the attribute that you want to exclude building block.
6. Enable the **Compare to target** option.
7. In the **Edit Rule Criterion** dialog, select **contains**, and type the value on which you want to evaluate the attribute and click **Apply**.
8. **Save** the rule.

De-emphasizing items that match a higher recommendation's selected attribute

You can compare a recommendation with another recommendation that is delivered within the same zone.

About this task

If a lower-ranked recommendation has one or more of the same attributes as a higher-ranked recommendation, the lower-ranked recommendation is moved to the end of the recommendation list.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions.
4. Select **De-emphasize similar**.
5. Drag the attribute building block that you want to compare.

   If you cannot drag an attribute building block, the attribute might not be enabled.
6. **Save** the rule.

Enabling attributes that have similar rules for de-emphasis

Attributes that are available for de-emphasis by similar rules must be configured. If you cannot drag an attribute building block after you create a de-emphasis by a similar rule, use this procedure to make that attribute building block available.

Procedure

1. In the side navigation, select **Manage** > **Offer Configuration**.
2. In the **Attributes to include in Offer Response** section, move the attribute from **Available** to **Selected**.

When multiple de-emphasis rules apply to recommendations

As you develop more business rules, you might find that multiple rules can affect the ordering of your recommendation list.

For example, if you have an offer that generates four recommendations: A, B, C, D and you have a rule that de-emphasizes recommendations A, C, and D, the new order of the list is B, A, C, D. If you have a second rule that de-emphasizes recommendations A and C, then the order is B, D, A, C.

This reordering can happen any time there is a combination of de-emphasis rules, that include the following rule types:

- De-emphasize by category
- De-emphasize specific items
- De-emphasize based on the value of an attribute
- De-emphasize by comparing attributes with the target

Note: Rules that use de-emphasize do not further de-emphasize items in a recommendation list. An example of this type of rule is "De-emphasizing items that match the selected attribute of a higher ranked recommendation" on page 63

Exclude items

You can use an exclude rule to remove items from the recommendation list that are generated by the cross-sell algorithm that is defined in the offer.

You have many options to use for exclude rules.

Related tasks

"Excluding categories from recommendation" on page 39
You can exclude items that are contained in one or more categories from the recommendation list.

"Excluding specific items from recommendation" on page 40
You can exclude one or more specific items from the recommendation list.

"Excluding based on the value of an attribute" on page 40
Exclude items from the recommendation list by evaluating the value of a specified attribute.

"Excluding by comparing attributes with the target" on page 40
Exclude items from the recommendation list by evaluating the value of a specified attribute.

"Excluding all recommendations for a target" on page 41
You can create a rule that produces no recommendations for an item or category.

Excluding categories from recommendation

You can exclude items that are contained in one or more categories from the recommendation list.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Exclude**.
5. Build the rule query to match the recommendations to exclude. Refer to "Build rule queries" on page 27
6. **Save** the rule.

Excluding specific items from recommendation

You can exclude one or more specific items from the recommendation list.

About this task

Note: This rule type excludes items from being recommended; it does not exclude them from becoming targets for the offer.

It is also possible to exclude all items that are NOT in the provided list. This feature is intended for print catalogs or call center recommendations where the recommendations must include only items in a specified list. Excluding items not in the provided list can enable cross-sells in the catalog itself and allow call center representatives to offer recommendations that are constrained to the specific print catalog that the caller has in hand.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Exclude**.
5. Drag the Product ID Page ID or Element IDbuilding block.
6. In the Edit Rule Criterion dialog, select **is in the following list**, type a description, then type one or more item IDs, separated by commas.

   To exclude items that are NOT in the specified list, select **is not in the following list**
7. **Save** the rule.

Excluding based on the value of an attribute

Exclude items from the recommendation list by evaluating the value of a specified attribute.

About this task

This rule type excludes items from being recommended; it does not exclude them from becoming targets for the offer.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Exclude**.
5. Drag the attribute that you want to exclude building block.
6. In the Edit Rule Criterion dialog, select **contains**, and type the value on which you want to evaluate the attribute.
7. Click **Apply**.
8. **Save** the rule.

Excluding by comparing attributes with the target

Exclude items from the recommendation list by evaluating the value of a specified attribute.

About this task

This rule type excludes items from being recommended; it does not exclude them from becoming targets for the offer.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **All Targets**, or limit the targets with a set of conditions. See "Defining conditions to select rule targets" on page 26
4. Select **Exclude**.
5. Drag the attribute that you want to exclude building block.
6. Enable the **Compare to target** option.
7. In the Edit Rule Criterion dialog, select **contains** for a text attribute such as brand or item name or **[=]equals** for a numeric attribute such as price or inventory.
8. Type the value on which you want to evaluate the attribute and click **Apply**.
9. **Save** the rule.

Excluding all recommendations for a target

You can create a rule that produces no recommendations for an item or category.

About this task

Excluding all recommendations can be useful for warranty products or gift cards, where it does not make sense to recommend specific products.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. Select to apply the rule to **Targets matching the following condition**.
4. Create a condition to identify the item for which you do not want recommendations that are generated. See "Defining conditions to select rule targets" on page 26
5. Select **Exclude All**.
6. **Save** the rule.

Blacklisting an item

You can create a blacklist rule when it is necessary to remove items from recommendations immediately.

About this task

A blacklist rule prevents a specified list of IDs from displaying as recommendations in all zones within approximately 1 hour of publishing the blacklist. The blacklist rule is intended to be used only in urgent situations where it is determined that an item must be removed from recommendations immediately. A blacklist exclusion remains until the item is removed from the blacklist rule. To exclude items from only one zone or offer rather than all zones, go to the rules interface of Digital Recommendations and create a list exclusion rule for these items. A list exclusion must be created for each active offer.

Note: If you do not have permissions to edit offers, you cannot use the Recommendation Blacklist function.

To create a blacklist rule:

Procedure

1. Determine the IDs to add to the blacklist rule.
2. Navigate to the **Manage** > **Recommendation Blacklist** page.
3. Enter the IDs in the list box. Use all uppercase letters. Click **Save**.

4. Perform a Publish Configuration Change to complete the blacklist update. For more information, see "Publishing configuration changes" on page 48 for more information.

Removing an item from the blacklist

You can remove the item from the blacklist to make the item available for recommendation.

About this task

To make an item available for recommendation, follow these steps:

Procedure

1. Determine the IDs to remove from the blacklist.
2. Navigate to the **Manage** > **Recommendation Blacklist** page.
3. Remove the IDs from the list box.
4. Click **Save**.
5. Perform a Publish Configuration Change to complete the blacklist update. For more information, see "Publishing configuration changes" on page 48.

Example business rules

Use these examples as models for creating your own rules or use them to better understand how to create rules

The following are some example business rules. To demonstrate the use of rule queries, the target on this first set of rules is **All Targets**.

Table 4. Example Business Rules for Products - All Targets

Example	Procedure to use	Apply this rule to	Rule Details
1. You include a warranty with every product, but do not sell the warranties separately. Therefore, you never want warranties to appear as recommendations.	"Excluding categories from recommendation" on page 39	All targets	Exclude > Category >select Category is >select the Warranty category
2. You want to promote a larger variety of products, so you do not want to include recommendations within the same category level of the target product.	"Excluding categories from recommendation" on page 39	All targets	Exclude>Category >select The top 1 parent categories that are the same as the target's top parent category
3. You include a free product with every order and do not want this product to appear as a recommendation.	"Excluding specific items from recommendation" on page 40	All targets	Exclude > Product ID > Product ID is in the following list >Add the free product ID to the list

Example	Procedure to use	Apply this rule to	Rule Details
Table 4. Example Business Rules for Products - All Targets (continued)			
4. You have a top selling product that does not need to be recommended.	"Excluding specific items from recommendation" on page 40	All targets	Exclude> Product ID > Product ID is in the following list >Add the top selling product ID to the list
5. You do not want to recommend products with inventory fewer than 10 units.	"Excluding based on the value of an attribute" on page 40	All targets	Exclude>Inventory > Inventory [<] is less than 10
6. You want only to recommend products with a different brand name than the target product.	"Excluding based on the value of an attribute" on page 40	All targets	Exclude> Brand > Brand is *X*
7. You want only to recommend products of the same brand as the target product.	"Excluding based on the value of an attribute" on page 40	All targets	Exclude > Brand > Brand is not *X*
8. You do not want to recommend products with a price less than $5.	"De-emphasizing based on the value of an attribute" on page 37	All targets	Exclude > Price > Price [<] is less than 5
9. You sell gift cards (product ID *005531*), but you want only to recommend them if there are no other recommendations.	"De-emphasizing specific items from recommendation" on page 37	All targets	De-emphasize > Product ID > Product ID is in the following list *gift card product ID*
10. You want products with inventory fewer than 20 units to appear at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 37	All targets	De-emphasize >Inventory >Inventory [<] is less than 20
11. You want products with a price less than $10 to appear at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 37	All targets	De-emphasize >Price > Price [<] is less than 10
12. You want products on clearance to be at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 37	All targets	De-emphasize >Sale (attribute) > Sale is Clearance
13. You want products of the same brand as the target product to be included as recommendation, but only at the end of the recommendation list.	"De-emphasizing by comparing attributes with the target" on page 38	All targets	De-emphasize by similar > Brand is the same

	Table 4. Example Business Rules for Products - All Targets (continued)			
Example	**Procedure to use**	**Apply this rule to**	**Rule Details**	
14. You want to promote products across multiple categories. If a recommendation is in the same category as a higher-ranked recommendation, you want to move it to the end of the recommendation list.	"De-emphasizing by comparing attributes with the target" on page 38	All targets	De-emphasize by similar > Category is the same	
15. You want to promote products across multiple brands. If a recommendation has the same brand name of a higher-ranked recommendation, you want to move it to the end of the recommendation list.	"De-emphasizing by comparing attributes with the target" on page 38	All targets	De-emphasize by similar > Brand is the same	
16. For camera products, you want products of the same brand higher on the recommendation list.	"Emphasizing items that match a higher recommendation's selected attribute" on page 35	All targets	Emphasize 100% of products by a factor of 1 where: > Brand > Compare to target > is the same as the target's brand	
17. You want to emphasize a specific brand (Brand X) in a recommendation list but, you want a maximum of 50% of recommendations to be from that brand.	"Emphasizing based on the value of an attribute" on page 34 "The percentage value" on page 32	All targets	Emphasize 50% of products by a factor of 1 where: > Brand > is Brand X	
18. You want to emphasize clearance items and you want them to appear closer to the front of the recommendation list.	"Emphasizing based on the value of an attribute" on page 34 "The factor value" on page 33	All targets	Emphasize 100% of products by a factor of 2 where: > Sale is Clearance	

Table 5. Example Business Rules for Products - All Targets			
Example	**Procedure to use**	**Apply this rule to**	**Rule Details**
You have excess inventory of a product and need to generate more sales. You want the product to appear as a recommendation for All products.	"Promoting specific products" on page 28	All targets	Promote specific items>By specified ID>add a list of IDs to promote

Following are some additional example business rules that use a combination of **Rule Target**, **Rule Type**, and **Rule Class**.

Table 6. Example Business Rules for Products - Other Targets			
Example	**Procedure to Use**	**Apply this rule to**	**Rule type and building blocks**
19. You sell gift cards, but do not want recommendations that are generated on the product view page for the gift card.	"Defining conditions to select rule targets" on page 26 "Excluding all recommendations for a target" on page 41	Targets matching the following conditions > Product ID > *gift card product ID*	Exclude All
20. For target products with a price less than $10, recommend only products that are also less than $10.	"Defining conditions to select rule targets" on page 26 "Excluding based on the value of an attribute" on page 40	Targets matching the following conditions > Price > Price [<] is less than 10	Exclude > Exclude recommendations where: > Price [>] is greater than 10
21. For target products over $200, you do no want to recommend products with a price less (60%) than the target.	"Defining conditions to select rule targets" on page 26 "Excluding based on the value of an attribute" on page 40	Targets matching the following conditions > Price > Price [>] is greater than 200	Exclude > Exclude recommendations where: > Price [<] is less than 120
22. For the Camera product ID 008221, you want to recommend only products of Brand X.	"Defining conditions to select rule targets" on page 26 "Promoting specific products" on page 28	Targets matching the following condition > Product ID > *008221*	Exclude > Exclude recommendations where: > Brand is not Brand X.

Table 7. Example Business Rules for Products - Other Targets			
Example	**Procedure to Use**	**Apply this rule to**	**Rule type and building blocks**
You have a new camera that you want to promote for any target product in the Camera category. This promotion lasts 90 days.	"Defining conditions to select rule targets" on page 26 "Promoting categories" on page 30	Targets matching the following conditions > Category > Category is *Camera category ID*	Promote > By specified IDs > *product ID of the new camera* > Promotion schedule > Specified date range > start and end date of the 90-day sale period
You want a category of products that has a lower profit margin (Category name is *Dollar*) to appear only at the end of the recommendation list.	"Defining conditions to select rule targets" on page 26 "Excluding based on the value of an attribute" on page 40	Targets matching the following condition > Categories >*Dollar*	De-emphasize 100% of recommendations by a factor of 1 where:> Profit margin > Profit margin[<] is less than 5

Viewing the effect of rules on the offer

After you activate an offer and the offer processes one time, you can view the effect of the rules that you created by viewing the rule statistics. Rule statistics can assist you in troubleshooting and in improving your rules processes.

Procedure

1. Ensure that the offer you for which want to view the statistics for is active.
2. Select the offer to view rules statistics for.
3. Click the **Rules Statistics** tab to view the number of items that are excluded, de-emphasized, emphasized, or promoted by each rule you created.

Description of the rule statistics view

You can view how rules affected the offer results. You can also open the individual rules.

Initial Targets
 The number of targets that are generated for the offer.

Final Targets
 The number of targets that produced recommendations after any target rules apply.

Rules
 The number of rules that are active for the offer.

Initial Recommendations Candidates
 Candidates for recommendation before any rules are applied. The **Avg / Target** value is the average number of recommendations that are generated for the **Initial Targets**.

Excluded by EPCMF settings
 The number and percentage of candidates that were removed because they were not in the most recent EPCMF file. These exclusions can occur if you recently updated your EPCMF and some items were removed.

Excluded by Invalid Metrics
 The number and percentage of candidates that were excluded because a numeric attribute contained an invalid numeric value. These exclusions occur if a column such as quantity has a non-numeric value.

Excluded by Rules

The number and percentage of candidates that were excluded by all exclusion rules in the offer. In the lower part of the screen, you can view a summary and a link to the rules that impacted the offer.

Emphasized

The number and percentage of candidates that were emphasized by all emphasis rules in the offer. In the lower part of the screen, you can view a summary and a link to the rules that impacted the offer.

De-emphasized

The number and percentage of candidates that were de-emphasized by all de-emphasis rules in the offer. In the lower part of the screen, you can view a summary and a link to the rules that impacted the offer.

Promotion Added

The number and percentage of candidates that were promoted by all promotion rules in the offer. In the lower part of the screen, you can view a summary and a link to the rules that impacted the offer.

Fallbacks Added

The number and percentage of candidates that were added because the Enable Recommendation Fallback option was selected as part of the offer settings. If a fallback is added and later removed by an exclusion rule, that fallback is not included in the **Fallbacks Added** statistics.

Final Recommendations

The number of recommendations that are generated after all rules are applied. The **Avg / Target** value is the average number of recommendations that are generated for the **Final Targets**.

Flagging rules that exclude too many candidates

When you create rules, there is a risk of eliminating too many recommendation candidates. You can flag rules that eliminate too many recommendations.

Procedure

1. Open the Rules Statistics tab in the offer.
2. Set the Flag rules that eliminate more than *x*% of recommendations parameter with the slider.

   The default is 50%.

Results

If the number of recommendations that are excluded exceeds the threshold that you set, the % value in the rule appears read and a red circle in the heading bar of the rule.

Testing rule variations

You can use test rules to create variations of a rule and compare output results.

Test rules allow you to create alternatives to rules that are already created. This enables you to make variations to the rule and compare the output. If you find an alternative rule that gives better results, you can convert it to a live rule.

Test rules do not run in production. However, if the offer that you are testing rule variations for has run at least once, you can see the affect that a test rule has using the Preview function. In the Preview function, the name of the test rule is displayed for any recommendation that was affected by the test rule.

Creating a test rule

You can create a test rule to compare alternate rule configurations.

About this task

You can only create one test rule for each rule in the offer.

Procedure

1. Navigate to the offer that you want to create a test rule for.
2. Click the **Rules** tab.
3. Identify the rule that you want to use as the basis for the test rule.
4. In the **Action** column, click the **Create Test Rule** icon.

   A new rule is created with the name Test*<rule>* where *<rule>* is the name of the rule you created the test rule from.
5. Click the test rule name.
6. Make the changes to the test rule that you want to compare with the original rule.

Converting a test rule to a real rule

If you prefer the results you get from your test rule, you can replace the original rule with the test rule.

About this task

If you convert your test rule to a real rule, the test rule details replace the real rule details and the test version is deleted.

Procedure

1. Navigate to the offer for which you want to convert a test rule in.
2. Click the **Rules** tab.
3. Identify the rule that you want to convert.
4. In the **Action** column, click the **Promote to Real Rule** icon.

Publishing configuration changes

You can change and publish configurations if adjustments are needed.

About this task

The following are examples of needing to change configurations:

- A/B test settings - The results of an A/B test are not going well. The A/B test must be stopped immediately.
- Zone settings - You must see four recommendations on the page instead of three.
- Recommendation plans - You must change a step in a recommendation plan.

In the preceding cases, after you complete the change, do the following steps:

Procedure

1. Select **System Overview**.
2. Click **Publish Configuration Changes**.

Results

The system publishes the changes and the changes go into effect in approximately 1 or 2 hours.

Note: This procedure does not update business rules.

Configure business rules policies for offers by using the new rules interface

Business rule policy defines what offer processing does when it applies a rule that evaluates an attribute but an item does not have a value or has an invalid value for that attribute.

During the early stages of your implementation, your EPCMF is configured for regular data uploads. Part of that configuration was determining what to do when a product does not have a value for an attribute that a rule is trying to evaluate.

For example, if you have a brand rule in place, whether the omission of brand data causes an item to be excluded from or included in the recommendation list depends on your data and the criteria for your rules. Perhaps you have a house brand that is indicated by a null value in the Brand attribute. In such a case, if you specify that a null value equals true, the brand rule excludes your house brand in the recommendation list. If you specify that a null value equals false, the brand rule includes your house brand along with all other non-matching brands.

Your administrator implemented rules during the preliminary data upload stages of your Digital Recommendations implementation and configured business rule policies in the Offer Configuration settings (**Manage > Offer Configuration**). See also "Configure business rules policies for offers by using the legacy rules interface" on page 69.

More considerations:

- The business rule policy is global for all rules and cannot be specified by rule set or by an individual rule.
- To minimize over eliminating recommended items because they have missing data, scope the business rules so they affect only the specific set of targets for which the rule applies. For example, suppose that you have a set of items, in the electronics category, to be excluded from recommendations that are based on the weight of the product. When you define the target for this rule, define the rule targets so that they apply only to targets in the electronics category. This practice prevents the rule system from processing this rule across the entire catalog and constrains exclusions that are based on missing data to the electronics department only.

Creating a null value policy for evaluating items against a rule

When you use the new rules interface, use this procedure to create a policy for evaluating items against a rule when those items have a null value.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:
    - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
    - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.
4. For **Attribute Behavior in Rules Processing** select one of these options under **When comparing an attribute that has no value to a value entered on a rule**:

   - Treat the comparison as True. If you select this option, when attributes with no value are evaluated against a rule, the comparison is treated as if it matches the rule.
   - Treat the comparison as False. If you select this option, when attributes with no value are evaluated against a rule, the comparison is treated as if it does not match the rule.

Creating a null value policy for comparing recommendations to the target

When you use the new rules interface, use this procedure to create a policy for comparing an attribute value between a recommendation and the target.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:
   - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
   - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.
4. For **Attribute Behavior in Rules Processing** select one of these options under **When comparing a recommendation attribute to a target attribute, and either attribute has no value or both attributes have no value**:
   - Treat the comparison as True. If you select this option, all cases where an attribute has no value, the comparison is treated as if the two values match.
   - Treat the comparison as False. If you select this option, all cases where an attribute has no value, the comparison is treated as if the two values do not match.

Creating an invalid attribute policy

For offers that use the new rule interface, you have 3 options for protection against invalid or malformed attributes.

About this task

A common example of an invalid attribute is a nonnumeric value in a numeric field.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:
   - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
   - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.
4. For **Attribute Behavior in Rules Processing** select one of these options under **When a numeric attribute has an invalid value**:
   - Do not generate any recommendations for the offer, force correction of the value before you continue. If you select this option, no offers are run until the attributes are corrected.
   - Treat the value as if it has no value and use the preceding comparison settings. If you select this option, the invalid value is treated as null and evaluated based on the policies for null values. Refer to "Creating a null value policy for evaluating items against a rule" on page 49 and "Creating a null value policy for comparing recommendations to the target" on page 50
   - Do not include the item with the invalid value in the attribute. Select this option to not recommend the item with the invalid value.

Field definitions for attributes and more settings

Reference information for Attributes and More Settings.

*Table 8. Reference information for **Offer Configuration** > **Product Offers** > **Attributes***

Field	Description
Attribute	Name of the attribute. This value is defined in the EPCMF.
Alias	Common name that is associated with the attribute. This value is defined in the EPCMF.
Data Type	Indicates the type of data that describes the alias. This value is defined in the EPCMF.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for image-based recommendations, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the image-based recommendation feature and picture view for previews. The attribute that provides the URL of a product's thumbnail image.
Attribute containing Product URL	Supports the image-based recommendation feature. The attribute that provides the URL of the item's main page on your website.
Use alternative prefix for images in image recommendations	Enable if you want to use a different prefix for image recommendations. Type the prefix in the text box.
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

*Table 9. Reference information for **Offer Configuration** > **Product Offers** > **More Settings***

Field	Description
Age of Data (session)	Click **Add time range** to add a time range for session-related data. The age of the data, in days, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight (session)	The value, as a percentage, is applied to the data that meets the value that is specified in the **Age of Data** field.

*Table 9. Reference information for **Offer Configuration** > **Product Offers** > **More Settings** (continued)*

Field	Description
Age of Data (buy-to-buy)	Click **Add time range** to add a time range for buy-to-buy data. The age of the data, in days, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight (buy-to-buy)	The value, as a percentage, that is applied to the purchases that occur in the time period that is specified by the Days between events field.
File format	The following format options are available for your output files: • Tabular: Formats the data so that each row represents a single target and has as many columns as there are recommendations. • Serial: Formats the data so that each row represents a recommendation. With this format, each target has multiple rows (one for each recommendation).
Rank Type	The following values are used to indicate the priority of a recommendation: • Score - the affinity score that is calculated for the recommendation • Rank - the item's position in the recommendation list. That is, the item with the highest affinity score has the rank of 1.
Include file headers	For tabular files only. Indicates whether you want to include in the output the comments and metadata that describe the contents of the file. The value that you select depends on the data processing mechanism that uses the output files. Some mechanisms can strip out the header and others cannot. If your process cannot strip out the header, clear this option to suppress the file header.

*Table 10. Reference information for **Offer Configuration** > **Content Offers** > **Page View Attributes***

Field	Description
Attribute	Name of the attribute.
Alias	Common name that is associated with the attribute.
Data Type	Indicates the type of data that describes the alias.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for picture views for previews, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the picture view for previews. The attribute that provides the URL of an item's thumbnail image.
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.

*Table 10. Reference information for **Offer Configuration** > **Content Offers** > **Page View Attributes** (continued)*

Field	Description
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

*Table 11. Reference information for **Offer Configuration** > **Content Offers** > **Element Attributes***

Field	Description
Attribute	Name of the attribute.
Alias	Common name that is associated with the attribute.
Data Type	Indicates the type of data that describes the alias.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for picture view for previews, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the picture view for previews. The attribute that provides the URL of an item's thumbnail image.
Attribute containing Content Page URL	The attribute that provides the URL of the content page on your website.
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

*Table 12. Reference information for **Offer Configuration** > **Content Offers** > **More Settings***

Field	Description
Age of Data	Click **Add time range** to add a time range for session-related data. The age of the data, in day, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight	The value, as a percentage, is applied to the data that meets the value that is specified in the **Age of Data** field.
Pages to exclude from targets or recommendations in Page Content offers	Add the pages that you do not want to appear in recommendations. You can exclude pages that you never want to recommend from a content page, such as a home page or search results page.

Table 12. Reference information for Offer Configuration > Content Offers > More Settings (continued)	
Field	**Description**
Categories of elements to be included as targets or recommendations in Element Content offers	Add the element types that you want to include as targets for element content offers. Categories can include PDF downloads, video views, and other element-tagged specific content. If left blank, all element types are used.

The impact of deprecated categories on rules

During recommendation processing, if a rule is found to have deprecated categories, then the rules is not applied/included in the offer processing. It is excluded and an exception is added to the rule errors table. All remaining rules that are valid, are applied to the offer and the offer is processed.

A category is deprecated if it is removed from the ECDF or if it changes location in the category hierarchy. If rules are based on a deprecated category, it can cause that rule to fail.

When Digital Recommendations encounters a rule that refers to a deprecated category, it ignores the rule but continue to process subsequent rules. This process ensures that the offer continues to generate recommendations.

Digital Recommendations also provides multiple methods of notifying you of any errors that occur due to deprecated categories.

- Digital Recommendations writes the recommendation files in the SFTP job. If an offer is found to have rules with deprecated categories, an email is generated for each offer. Anyone that is listed in the email contact list for the offer receives the email. The email contains information about which rules have errors along with the deprecated categories present in those rules.

- In the user interface, the rules that contain errors due to deprecated categories are marked with a warning icon. The warning icon also contains tooltips, which identify the rules in error.

When you are notified of an error due to deprecated categories, you will need to correct the rules in error so the next recommendation run can apply the corrected rules to the offer.

Apply business rules to offers by using the legacy rules interface

If your offers need to be fine-tuned to include, exclude, promote, or de-emphasize products, use business rules.

For example:

- Use category rules to prevent men's products from appearing in the women's department.
- Use inventory rules to prevent recommending out-of-stock items.
- Use price rules to facilitate up-selling and down-selling.
- Use margin rules to eliminate low margin items.

Rules are based on data that is provided to Digital Analytics by using an import file. Available rules depend on the offer type. For example: product cross-sell offers has different rules available than category or search term-based offers. There are four types of rules:

Exclusionary rules
Exclusionary rules eliminate items from recommendations that are based on defined criteria. For example, exclusionary rules are expressed as "Exclude recommendations where the Inventory of the product is less than 10.

De-emphasis rules

De-emphasis rules, rather than excluding, move recommendations to the back of the candidate list. For example, if a product has low margins but is ranked as having high relevance, a de-emphasis rule moves that product to the back of the list of valid recommendation candidates and moves the higher margin items forward. If there is limited recommendation data for a specific target or when all recommendations are low margin, then data is still available to present to the visitor.

Promotional rules

Organizations that are introducing new products or articles or that have items with high inventory can set up promotions that insert designated products in front of behavioral recommendations. You can create promotional rules to prioritize manually designated products over recommendations from Digital Analytics. Digital Recommendations can help you. You can set a percentage weight that says "Display these two products in the first position for 50% of the products in the Men's department".

Blacklisting

When Digital Recommendations delivers recommendations to a website in real time, in some cases, you need to immediately remove items from recommendations. You can accomplish this using the blacklist function. Blacklisting removes a list of IDs from displaying as recommendations to site zones. Blacklisting goes into effect within approximately 1 hour of starting the blacklist. Blacklisting is only available for dynamically delivered recommendations.

More about business rules for offers

The business rules that you create for your offers are based on the (up to 50) attributes you provide in the ECDF and EPCMF data files. For information about these files, see the ECDF and EPCMF data files chapter in the Acoustic Product Recommendations Configuration Guide.

Starting with affinity data

Before rules are processed, Digital Recommendations generates recommendations based on the affinity weights that are set for an offer. Digital Recommendations attempts to generate up to 50 recommendations per target so that a large data set is available against which to apply rules. The ability of Digital Recommendations to generate recommendations is largely based on the data analysis time period and the degree of traffic that the site receives. To specify the number of final recommendations you want to receive, follow these examples:

- For flat file offers, specify up to 30 recommendations on the **Offer Settings** tab.
- For dynamic offers, specify up to 12 recommendations when you configure the site zone where the offer is used. If you need more than 12 recommendations, contact your Acoustic Digital Analytics client consultant.

Rule specificity

When you create rules by using attribute values, the values you enter in the rules interface **must exactly match** the values that are loaded by using the ECDF and EPCMF files.

Note: Rule specificity includes the use of spaces and capitalization.

Business rule policy

The business rule policy governs the execution of all rules and cannot be specified by rule set or by an individual rule. For more information, see "Configure business rules policies for offers by using the legacy rules interface" on page 69.

Rules data

Do not create rules on an active offer until all rule data is loaded into the Digital Analytics database. Rules that are created when rule data is not provided erroneously eliminates items and deliver an unexpected result. For example, rules data is loaded into Digital Analytics by using the **Enterprise Product Report** or **Product View Extra Fields** on Tuesday. The data is available for processing on an Offer that is scheduled for Wednesday delivery.

What is a node?

Use node levels as a comparison option for creating rules.

A node is a category level in a category hierarchy. The top level nodes of the hierarchy are:

Node 1
   First level
Node 2
   Second level
Node 3
   Third level

For example:

Table 13. Description of a Node		
Node 1	**Node 2**	**Node 3**
Men's		
	Men's Shoes	
		Athletic Shoes
		Dress Shoes
	Men's Pants	
		Casual Pants
		Dress Pants
Women's		
	Women's Shoes	
		Boots
		Sandals
	Women's Tops	
		Blouses
		Sweaters

Defining individual rule groups

Your first step in defining business rules is to create a rule group. Use this procedure to create a rule group that can be used only with the current offer.

About this task

When you have many rules, rule groups are convenient for grouping similar rules so they are easy to find. Rule groups also allow for multiple people to work on different rule groups at the same time for the same offer and manage rules independently.

After you create a rule group, you define one or more business rules in that group.

Procedure

1. Open the offer and then click the **Rules** tab.

2. Click **Add New Group** and provide a rule group name.

Creating a rule

After your rule group is created, create one or more rules in that rule group.

Procedure

1. Select the rule group in which to add the rule.
2. On the Rules tab, click **Add Rule**.
3. See "Rule targets" on page 57
4. Click **Update Rules**.
5. Define the rule parameters. See "Rule classes and rule types" on page 58
6. Click **Save**.

Rule targets

Rule Targets are the targets for which are generating recommendations. The following are the items for which target rules apply.

All Active Targets
Includes all active targets or categories for which data is collected by Digital Analytics during the Data Analysis Time Period that is established for this offer.

Select From Categories
Defines categories of Targets. You can select one or more categories to include as allowed targets for this rule set.

Note: These categories are defined by the import files for the Enterprise Product Report. To use this feature, these import files must be provided. Categories as defined in the Category Definition File are supported but must be configured by a Digital Analytics Support member.

Input List
You specify a list of Targets by specifying the item ID. Up to 999 items can be defined in this list. This option is not available for Site Category, EPR Category, and Search offers because they do not have targets that are based on individual items.

Select From Attributes
You specify Targets by specifying one or more attributes. This option is not available for Site Category, EPR Category, and Search offers because they do not have targets that are based on individual items.

Note: These Attributes are defined by the import files for the Enterprise Product Report. To use this feature, these import files must be provided and aliased.

Building complex logic for rule targets

The attribute rules tool is flexible. You can use a combination of attributes and attribute values to accommodate different use cases.

The attribute rules tool dynamically visualizes the rule as it is being constructed by using the supported AND and OR logic. The following rules apply to attribute target selection:

- When the operator is selected as being either positive (is) or negative (is not) for a specific attribute, the available operators are limited in the interface to the selected type.
  - If the operator is positive, then the condition is always OR.
  - If the operator is negative (is not), then the condition is always AND.
  - When multiple attributes are used together, the condition between attributes is AND.

After you identify the rule targets, a rule set is shown with the associated targets.

Rule classes and rule types

When you create a rule, you specify a class of rules.

The following are the available rule classes.

- Promotion
- Exclusion
- De-emphasis

For each class, you specify a rule type within that class that gives you flexibility in creating your rule. The following table contains a summary of rule classes and types and where to look for more information.

Table 14. Rule Class and Type Table

Rule Class	Rule Type	Rule Subtype	Related Procedure
Promotion	Promote a Specific Item	None	"Promoting products" on page 59
Exclusion	Exclude by Category	None	"Excluding categories of products" on page 60
Exclusion	Exclude by ID	None	"Excluding specific items" on page 60
Exclusion	Exclude by Attribute	Recommendation Attribute Exclusion	"Excluding based on the value of an attribute" on page 61
Exclusion	Exclude by Attribute	Recommendation attribute to target attribute exclusion	"Excluding by comparing attributes with the target" on page 62
De-emphasis by criteria	De-emphasis by Category	None	"De-emphasizing categories of products" on page 60
De-emphasis by criteria	De-emphasis by ID	None	"De-emphasizing specific items" on page 61
De-emphasis by criteria	De-emphasis by Attribute	Recommendation Attribute de-emphasis	"De-emphasizing based on the value of an attribute" on page 61
De-emphasis by criteria	De-emphasis by Attribute	Recommendation attribute to target attribute de-emphasis	"De-emphasizing by comparing attributes with the target" on page 62
De-emphasis by Similarity	De-emphasis by Attribute	None	"De-emphasizing items that match the selected attribute of a higher ranked recommendation" on page 63

Promoting products

You use promotions to place designated items at the beginning of the recommendation list.

About this task

If you are introducing new products to market or you have items with high inventory, you can use promotions that insert products in front of behavioral recommendations. Promoting products prioritizes these items over recommendations that are generated from the Digital Recommendations algorithm.

You also specify the percentage of times that the item is displayed at the beginning of the list.

See also "Recommending items that are part of a set" on page 63.

You cannot use this function with Site category, EPR category, or Search term.

To set up promotions, follow these steps:

Procedure

1. Click **Update Rules** in the rule set that corresponds to the Targets for a promotion.
2. Select **Exclusion/Promotion**.
3. Select **Rule Type**. Then, select **Promote a Specific Item**.
4. In the **ID** fields, enter one or more IDs that you want to position before behavioral recommendations for the associated targets.

   The characters in IDs must be entered as all uppercase letters. Products that are listed here are positioned in sequence.
5. Set the **Frequency Percentage** to control the percentage of associated targets for which the promotion applies.
   For example, if you specify the Brand A Camera as a promotion for all targets in the Camera department, you might not want to have this item show up on the website as the first recommendation for every product in the Camera department. If you set the Frequency Percentage to 25%, then the Brand A Camera t is randomly inserted as the first recommendation for 25% of the targets in the Camera department.

   Note: If you apply more than one promotion rule to a single target, Digital Recommendations resolves the conflicts so that only one promotion rule is applied to a target. Priority is given to promotions in the following order:

   a. Promotions that are applied to a list of items.

   b. Promotions that are based on where the promotion is applied to the category hierarchy (category depth).

   c. Promotions that are applied to all items.

   d. Any remaining conflicts are resolved by a random selection.
6. Check the **Apply Exclusionary Rules** check box if you want any already-existing rules that apply to the item to be in effect. If this box is not checked, no already-existing rules affect this promoted item.
7. Set the **Promotion Schedule**.

   The following options are available to schedule a promotion.

   Always in effect
   Promotions set to **Always in effect** run until the promotional rule is deleted or its schedule is changed.

   Scheduled Promotion
   Promotions set to a specific start and end date are valid for the specified time period.

   Note: The promotion is processed only when the offer it is associated with is scheduled to be updated. For example, if the offer is updated weekly every Wednesday and the promotion is scheduled to end on a Monday, the promotion is not removed from the offer until Digital Recommendations runs on the following Wednesday.

8. Click **Save**.

Promoting products based on an attribute

You can use product attributes to promote products.

About this task

When you create your EPCMF file, you can create attribute fields to further describe your products. If so, you can promote product based on the value of one of the attributes.

Procedure

1. Create or open a product cross-sell offer. From the **Settings** tab, click **Advanced Options**.
2. In the **Product Promotion Options** area, select **Enable promotions via an attribute**.
3. Select the attribute that you want to base your promotion on.
4. From the **Behavior** drop-down list, specify how to prioritize the related items: before the regularly determined list of recommendations, after that list, or after everything, including any fallback recommendations.
5. Click **Apply**.

Results

At run time, items with these relationships are included in recommendation lists before any business rules are applied to the list.

Note: You can also create business rules (on the **Rules** tab of the offer) to promote specific items by their ID. For information, see "Promoting products" on page 59.

Excluding categories of products

You can exclude items that are contained in one or more categories from the recommendation list.

Procedure

1. Click **Update Rules** in the Rule Set.
2. Select **Exclusion/Promotion** as the **Rule Class**.
3. Select **Exclude by Category** as the **Rule Type**.
4. Specify one or more categories.

De-emphasizing categories of products

You can move items that are contained in one or more categories to the end of the list of recommendations.

Procedure

1. Click **Update Rules** in the Rule Set.
2. Select **De-emphasis by Criteria** as the **Rule Class**.
3. Select **De-emphasis by Category** as the **Rule Type**.
4. Specify one or more categories.

Excluding specific items

You can exclude one or more specific items that are from the recommendation list.

About this task

This rule type excludes items from being recommended; it does not exclude items from becoming targets for the offer.

It is also possible to exclude all items that are NOT in the provided list. This feature is intended for print catalogs or call center recommendations where the recommendations must include only items in a specified list. Excluding items not in the provided list can enable cross-sells in the catalog itself. Excluding items also allows call center representatives to offer recommendations that are constrained to the specific print catalog that the caller has in hand. To exclude all items that are NOT in the specified list, precede the descriptor with a tilde (~).

It is also possible to exclude all items that are NOT in the provided list. This feature is intended for print catalogs or call center recommendations where the recommendations must include only items in a specified list. To exclude all items that are NOT in the specified list, precede the descriptor with a tilde (~).

Procedure

1. Click **Update Rules** in the rule set.
2. Select **Exclusion/Promotion** as the **Rule Class**.
3. Select **Exclusion** as the **Rule Class**.
4. Select **Exclude by ID** as the **Rule Type**.
5. Specify the ID for up to 999 items.

De-emphasizing specific items

You can move one or more specific items to the end of the recommendation list.

Procedure

1. Click **Update Rules** in the Rule Set.
2. Select **De-emphasis by Criteria** as the **Rule Class**.
3. Select **De-emphasis by ID** as the **Rule Type**.
4. Specify the ID for up to 999 items.

Excluding based on the value of an attribute

You can exclude items from the recommendation list by evaluating the value of a specified attribute.

About this task

Load any attribute into Digital Recommendations by using the EPCMF and ECDF files and use them as criteria for creating rules.

Procedure

1. Click **Update Rules** in the Rule Set.
2. Select **Exclusion/Promotion** as the **Rule Class**.
3. Select **Exclusion** as the **Rule Class**.
4. Select **Exclude by Attribute** as the **Rule Type**.
5. Select **Recommendation Attribute Exclusion** as the **Rule Sub Type**.
6. Select the attribute that you want to evaluate.
7. Specify how you want to evaluate the value of the attribute.
   The list of available operators changes depending on the type of data the attribute uses.
8. Specify the value against which you want to evaluate the attribute.

De-emphasizing based on the value of an attribute

You can move items to the end of the recommendation list by evaluating the value of a specified attribute.

Procedure

1. Click **Update Rules** in the Rule Set.

2. Select **De-emphasis by Criteria** as the **Rule Class**.

3. Select **De-emphasis by Attribute** as the **Rule Type**.

4. Select **Recommendation attribute Exclusion** as the **Rule Sub Type**.

5. Select the attribute that you want to evaluate.

6. Specify how you want to evaluate the value of the attribute.

   The list of available operators changes depending on the type of data the attribute uses.

7. Specify the value against which you want to evaluate the attribute.

Excluding by comparing attributes with the target

You can exclude items by comparing the value of an attribute with the value of the same attribute on the target.

About this task

Sale items are a common use for selecting targets from attributes. If a target is not on sale, many merchants want to eliminate all sale items from recommendations. But if the target is on sale, those merchants want to allow sale and non-sale items as recommendations. With this rule, all targets that are not on sale can be selected if a sale attribute is provided in the Enterprise Product Report. Then, a subsequent exclusionary rule can be created to eliminate all items that are on sale. The result is that sale items are not recommended when full-price items are being displayed, but both full-price and sale items are recommended when sale items are being displayed.

One of the comparison options is by node.

Procedure

1. Click **Update Rules** in the Rule Set.

2. Select **Exclusion/Promotion** as the **Rule Class**.

3. Select **Exclusion** as the **Rule Class**.

4. Select **Exclude by Attribute** as the **Rule Type**.

5. Select **Recommendation attribute to target attribute Exclusion** as the **Rule Sub Type**.

6. Select the attribute that you want to compare.

7. Specify how you want to compare the values of the attribute.

   The list of available operators changes depending on the type of data the attribute uses.

De-emphasizing by comparing attributes with the target

You can move items to the end of the recommendation list by comparing the value of an attribute with the value of the same attribute on the target.

About this task

One of the comparison options is by node.

Just as your items can have relationships in the context of sets or matches, they can also have relationships that make them mutually exclusive. For example, if you have the kind of relationships between items such that item A must never be included in the recommendations for item B.

If your catalog has these kinds of relationships and you want to exclude or de-emphasize items based on one-to-one relationships, complete the following steps.

Procedure

1. Click **Update Rules** in the Rule Set.

2. Select **De-emphasis by Criteria** as the **Rule Class**.

3. Select **De-emphasis by Attribute** as the **Rule Type**.

4. Select **Recommendation attribute to target attribute de-emphasis** as the **Rule Sub Type**.
5. Select the attribute that you want to compare.
6. Specify how you want to compare the values of the attribute.

    The list of available operators changes depending on the type of data the attribute uses.

De-emphasizing items that match the selected attribute of a higher ranked recommendation

You can compare a recommendation with another recommendation that is delivered within the same zone.

About this task

If a lower-ranked recommendation has one or more of the same attributes as a higher-ranked recommendation, the lower-ranked recommendation is moved to the end of the recommendation list.

Procedure

1. Click **Update Rules** in the Rule Set.
2. Select **De-emphasis by Similarity** as the Rule Class.
3. Select **De-emphasis by Attribute** as the Rule Type.
4. In the **Recommendation** field, select the attributes to compare with the target list. If any of the attributes match with the same attribute of the higher ranked recommendations, the lower ranked recommendation moves to the bottom of the recommendation list.
5. **Save** the rule.

When multiple de-emphasis rules apply to recommendations

As you develop more business rules, you might find that multiple rules can affect the ordering of your recommendation list.

For example, if you have an offer that generates four recommendations: A, B, C, D and you have a rule that de-emphasizes recommendations A, C, and D, the new order of the list is B, A, C, D. If you have a second rule that de-emphasizes recommendations A and C, then the order is B, D, A, C.

This reordering can happen any time there is a combination of de-emphasis rules, that include the following rule types:

- De-emphasize by category
- De-emphasize specific items
- De-emphasize based on the value of an attribute
- De-emphasize by comparing attributes with the target

Note: Rules that use de-emphasize do not further de-emphasize items in a recommendation list. An example of this type of rule is "De-emphasizing items that match the selected attribute of a higher ranked recommendation" on page 63

Recommending items that are part of a set

You can include matching or related items in recommendation lists

About this task

Some items in your online catalog might have relationships to other products such as sets or matches. For example, a table can have matching chairs. Or a necklace can be a part of a set that includes a matching bracelet and earrings.

If your catalog has these kinds of permanent relationships and you want to include matching or related items in recommendation lists, complete the following steps:

Procedure

1. Select an attribute in the EPCMF. In this field, add the remaining products in the set. Separate them with a pipe delimiter. For example, if the necklace is sku123, the bracelet is sku456, and the earrings are sku789, you set the attribute values as in the following example:

Table 15. Example EPCMF entry					
File Date	**Client ID**	**Item ID**	**Item name**	**Item primary category ID**	**Static attribute *9***
...	...	sku123	Necklace	...	sku456|sku789
...	...	sku456	Bracelet	...	sku123|sku789
...	...	sku789	Earrings	...	sku123|sku456

2. Go to the **Admin** function and select **Extra Fields**.
3. Find the **Enterprise Product Static Attributes** field that corresponds to the attribute you selected in the previous step (Static attribute *9*).
4. Type a name for the set in the **Alias** field, such as "related products."

5. Upload the EPCMF by using Acoustic Digital Analytics Import.
6. Create or open a product cross-sell offer. From the **Settings** tab, click **Advanced Options**.
7. In the **Product Promotion Options** area, select **Enable promotions via an attribute**.
8. Select the attribute that you selected to represent the relationship ("related products").
9. From the **Behavior** drop-down list, specify how to prioritize the related items: before the regularly determined list of recommendations, after that list, or after everything, including any fallback recommendations.
10. Click **Apply**.

Results

At run time, items with these relationships are included in recommendation lists before any business rules are applied to the list.

Note: You can also create business rules (on the **Rules** tab of the offer) to promote specific items by their ID. For information, see .

Blacklisting an item

You can create a blacklist rule when it is necessary to remove items from recommendations immediately.

About this task
A blacklist rule prevents a specified list of IDs from displaying as recommendations in all zones within approximately 1 hour of publishing the blacklist. The blacklist rule is intended to be used only in urgent situations where it is determined that an item must be removed from recommendations immediately. A blacklist exclusion remains until the item is removed from the blacklist rule. To exclude items from only one zone or offer rather than all zones, go to the rules interface of Digital Recommendations and create a list exclusion rule for these items. A list exclusion must be created for each active offer.

Note: If you do not have permissions to edit offers, you cannot use the Recommendation Blacklist function.

To create a blacklist rule:

Procedure

1. Determine the IDs to add to the blacklist rule.

2. Navigate to the **Manage** > **Recommendation Blacklist** page.

3. Enter the IDs in the list box. Use all uppercase letters. Click **Save**.

4. Perform a Publish Configuration Change to complete the blacklist update. For more information, see "Publishing configuration changes" on page 48 for more information.

Removing an item from the blacklist

You can remove the item from the blacklist to make the item available for recommendation.

About this task

To make an item available for recommendation, follow these steps:

Procedure

1. Determine the IDs to remove from the blacklist.

2. Navigate to the **Manage** > **Recommendation Blacklist** page.

3. Remove the IDs from the list box.

4. Click **Save**.

5. Perform a Publish Configuration Change to complete the blacklist update. For more information, see "Publishing configuration changes" on page 48.

Example business rules for products

Use these examples as models for creating your own rules or use them to better understand how to create rules

The following are some example business rules. To demonstrate the use of Rule Type and Rule class, the Target on this first set of rules is **All Targets**.

Table 16. Example Business Rules for Products- All Targets

Example	Procedure to Use	Rule Target	Rule Class and Type for the Example
1. You have excess inventory of a product and need to generate more sales. You want the product to appear as a recommendation for All products.	"Promoting products" on page 59	All Targets	Promotion>Promote a Specific Item>specify Product ID
2. You include a warranty with every product, but do not sell the warranties separately. Therefore, you never want warranties to appear as recommendations.	"Excluding categories of products" on page 60	All Targets	Exclusion>Exclude By Category>select the Warranty category

Table 16. Example Business Rules for Products- All Targets (continued)

Example	Procedure to Use	Rule Target	Rule Class and Type for the Example
3. You want to promote a larger variety of products, so you don't want to include recommendations within the same category level of the target product.	"Excluding by comparing attributes with the target" on page 62	All Targets	Exclusion>Exclude by Attribute>Recommendation Attribute to Target Attribute Exclusion>Product Category ID does not match node 1 of target Attribute
4. You include a free product with every order and do not want this product to appear as a recommendation.	"Excluding specific items" on page 60	All Targets	Exclusion>Exclude by ID>specify the Product ID
5. You have a top selling product that does not need to be recommended.	"Excluding specific items" on page 60	All Targets	Exclusion>Exclude by ID>specify the Product ID
6. You don't want to recommend products with inventory fewer than 10 units.	"Excluding based on the value of an attribute" on page 61	All products	Exclusion>Exclude by Attribute>Recommendation Attribute Exclusion>Inventory [<] is less than 10
7. You want to recommend only products with a different brand name than the target product.	"Excluding by comparing attributes with the target" on page 62	All Targets	Exclusion>Exclude by Attribute>Recommendation Attribute to Target Attribute Exclusion>Brand is X.
8. You want to recommend only products of the same brand as the target product.	"Excluding by comparing attributes with the target" on page 62	All Targets	Exclude>Exclude by Attribute>Recommendation Attribute to Target Attribute Exclusion>Brand is not X.
9. You sell gift cards (product ID *005531*), but you want to recommend them only if there are no other recommendations.	"De-emphasizing specific items" on page 61	All Targets	De-emphasis by Criteria> De-emphasis by ID>005531
10. You want products with inventory fewer than 20 units to appear at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 61	All Targets	Exclude>by Attribute>Recommendation Attribute Exclusion>Inventory [<] is less than 20
11. You want products with a price less than $10 to appear at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 61	All Targets	De-emphasis by Criteria> De-emphasis by Attribute>Recommendation Attribute De-emphasis >Price [<] is less than 10

Table 16. Example Business Rules for Products- All Targets (continued)			
Example	**Procedure to Use**	**Rule Target**	**Rule Class and Type for the Example**
12. You want products on clearance to be at the end of the recommendation list.	"De-emphasizing based on the value of an attribute" on page 61	All Targets	De-emphasis by Criteria>De-emphasis by Attribute>Recommendation Attribute to Target Attribute Exclusion>Brand is Clearance.
13. You want products of the same brand as the target product to be included as recommendation, but only at the end of the recommendation list.	"De-emphasizing by comparing attributes with the target" on page 62	All Targets	De-emphasis by Criteria > De-emphasis by Attribute>Recommendation Attribute De-emphasis > Brand is target Attribute
14. You want to promote products across multiple categories. So, if a recommendation is in the same category as a higher-ranked recommendation, you want to move it to the end of the recommendation list.	"De-emphasizing items that match the selected attribute of a higher ranked recommendation" on page 63	All Targets	De-emphasis by Similarity>De-emphasis by Attribute>Product Category ID
15. You want to promote products across multiple brands. So, if a recommendation has the same brand name of a higher-ranked recommendation, you want to move it to the end of the recommendation list.	"De-emphasizing items that match the selected attribute of a higher ranked recommendation" on page 63	All Targets	De-emphasis by Similarity>De-emphasis by Attribute>Brand
16. You don't want to recommend products with a price less than $5.	"Excluding based on the value of an attribute" on page 61	All Targets	Exclusion>Exclude by Attribute>Recommendation Attribute Exclusion>Price [<] is less than 5

The following are more examples of business rules that use a combination of **Rule Target**, **Rule Type**, and **Rule Class**.

Table 17. Example Business Rules for Products- Other Targets			
Example	**Procedure to Use**	**Rule Target**	**Rule Type and Class**
17. You have a new camera that you want to promote for any target product in the Camera category. This promotion lasts 90 days.	"Promoting products" on page 59	Select from Categories>Camera	Promotion>Promote a Specific Item>Schedule Promotion>Specify a 90-day date range.

Table 17. Example Business Rules for Products- Other Targets (continued)

Example	Procedure to Use	Rule Target	Rule Type and Class
18. For target products with a price less than $10, recommend only products that are also less than $10.	"Excluding based on the value of an attribute" on page 61	Select from Attributes>Price [<] is less than 10	Exclusion>Exclude by Attribute > Recommendation Attribute Exclusion>Price [>] is greater than 10
19. For target products over $200, you don't want to recommend products with a price less (60%) than the target.	"Excluding based on the value of an attribute" on page 61	Select from Attributes>Price [>] is greater than 200	Exclusion>Exclude by Attribute > Recommendation Attribute to Target Attribute Exclusion>Price [<] is less than 60% of the target Price
20. For camera products, you want products of the same brand higher on the recommendation list.	"De-emphasizing based on the value of an attribute" on page 61	Select from Categories>Camera	De-emphasis by Criteria>De-emphasis by Attribute > Recommendation Attribute De-emphasis > Brand is not target Attribute
21. For the Camera product ID 008221, you want to recommend only products of Brand X.	"Excluding based on the value of an attribute" on page 61	Select from Categories>Camera Input List>008221	Exclusion>Exclude by Attribute > Recommendation Attribute Exclusion>Brand is not X.
22. You want a category of products that has a lower profit margin (Category name is *Dollar*) to appear only at the end of the recommendation list.	"De-emphasizing categories of products" on page 60	Select from Categories>*Dollar*	De-emphasize by Criteria>De-emphasis By Category>select the Dollar category

Viewing the effect of rules on the offer

After you activate an offer and the offer processes one time, you can view the effect of the rules that you created by viewing the rule statistics. Rule statistics can assist you in troubleshooting and in improving your rules processes.

Procedure

1. Ensure that the offer you for which want to view the statistics for is active.
2. Select the offer to view rules statistics for.
3. Click the **Rules Statistics** tab to view the number of items that are excluded, de-emphasized, emphasized, or promoted by each rule you created.

Publishing configuration changes

You can change and publish configurations if adjustments are needed.

About this task

The following are examples of needing to change configurations:

- A/B test settings - The results of an A/B test are not going well. The A/B test must be stopped immediately.
- Zone settings - You must see four recommendations on the page instead of three.
- Recommendation plans - You must change a step in a recommendation plan.

In the preceding cases, after you complete the change, do the following steps:

Procedure

1. Select **System Overview**.
2. Click **Publish Configuration Changes**.

Results

The system publishes the changes and the changes go into effect in approximately 1 or 2 hours.

Note: This procedure does not update business rules.

Configure business rules policies for offers by using the legacy rules interface

A business rule policy defines what offer processing does when it applies a rule that evaluates an attribute. An item does not have a value or has an invalid value for that attribute.

EPCMF configuration

During the early stages of your implementation, your EPCMF is configured for regular data uploads. Part of that configuration was determining what to do when a product does not have a value for an attribute that a rule is trying to evaluate.

For example, if you have a brand rule in place, whether the omission of brand data causes an item to be excluded from or included in the recommendation list depends on your data and the criteria for your rules. Perhaps you have a house brand that is indicated by a null value in the Brand attribute. In such a case, if you specify that a null value equals `true`, the brand rule excludes your house brand in the recommendation list. If you specify that it equals `false`, the brand rule includes your house brand along with all other non-matching brands.

Note: Your administrator made the previous decisions during the preliminary data upload stages of your Digital Recommendations implementation and configured business rule policies in the Offer Configuration settings (**Manage > Offer Configuration**). For more information, see "Configure business rules policies for offers by using the legacy rules interface" on page 69.

Defining default values for specific attributes gives you control over business rule behavior separately for each attribute. For offers that use the legacy rules interface, these defaults apply if a rule is evaluating items that are based on an attribute and encounters an item that has a null value for the attribute. For example, you define a rule for all targets to eliminate all recommendations where ratings are greater than three. Yet your data feeds do not provide inventory values for all items. In this case, your administrator most likely used the **Product Attribute Definition** settings to specify a default value of -1 for any items with a null value for their inventory attribute. That way, items with unknown inventories are excluded from recommendation lists when your rating rule is processed.

More considerations:

- The business rule policy is global for all rules and cannot be specified by rule set or by an individual rule.
- To minimize over eliminating recommended items because they have missing data, scope the business rules so they affect only the specific set of targets for which the rule applies. For example, suppose that you have a set of items, in the electronics category, to be excluded from recommendations that are based on the weight of the product. When you define the target for this rule, define the rule targets so that they apply only to targets in the electronics category. This practice prevents the rule system from processing this rule across the entire catalog and constrains exclusions that are based on missing data to the electronics department only.

Implementation configuration - null values

Business rule policy defines what offer processing does when it applies a rule that evaluates an attribute but an item does not have a value for that attribute.

During the early stages of your implementation, part of configuration was determining what to do when content does not have a value for an attribute that a rule is trying to evaluate. For example, if you have a publisher rule in place. Whether the omission of publisher data causes an item to be excluded from or included in the recommendation list depends on your data and the criteria for your rules. Perhaps you have self-published content that is indicated by a null value in the Publisher attribute. In such a case, if you specify that a null value equals `true`, the publisher rule excludes your self-published item in the recommendation list. If you specify that it equals `false`, the publisher rule includes your self-published item along with all other items with non-matching publishers.

Defining default values for specific attributes gives you control over business rule behavior separately for each attribute. These defaults apply if a rule is evaluating items that are based on an attribute and encounters an item that has a null value for the attribute.

For example, you define a rule for all targets that eliminate all recommendations where ratings are greater than three. Yet your data feeds do not provide rating values for all items. In this case, your administrator most likely used the **Page Attribute Definition** settings to specify a default value of -1 for any items with a null value for their rating attribute. Items with unknown ratings are excluded from recommendation lists when your rating rule is processed.

More considerations:

- The business rule policy is global for all rules and cannot be specified by rule set or by an individual rule.
- To minimize over eliminating recommended items because they have missing data, scope the business rules so they affect only the specific set of targets for which the rule applies. For example, suppose that you have a set of items, in the children's category, that are to be excluded from recommendations based on the length of the article. When you define the target for this rule, define the rule targets so that they apply only to targets in the children's category. This practice prevents the rule system from processing this rule across the entire catalog and constrains exclusions that are based on missing data to the children's department only.

Specifying a default value for items with a null value

Use this procedure to define default values for attributes. These defaults apply if a rule is evaluating items that are based on an attribute and encounters an item that has a null value for the attribute.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:

   - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
   - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.

4. In the **Attribute Definition** table, find the attribute that needs a default value and specify it in the **Default Value** field.

As a safeguard for attributes that use a character string, you can set a default value of "n/a". So, rather than a rule processing a null value, it uses the term "n/a". The term "n/a" is unlikely to cause a conflict in your data because character attributes such as brand do not have a value of "n/a".

As a safeguard for attributes that use a numeric value, you can set a default value of "-1". So rather than a rule processing a null value, it uses a "-1". T3he "-1" value is unlikely to cause a conflict in your data because numeric attributes such as price or inventory do not have a value of -1.

As a safeguard for attributes that use a character string, you can set a default value of "n/a". So, rather than a rule trying to process a null value, it uses the term "n/a". The term "n/a" is unlikely to cause a conflict in your data because character attributes such as publisher do not have a value of "n/a".

As a safeguard for attributes that use a numeric value, you can set a default value of "-1". So rather than a rule attempting to process a null value, it uses a "-1". The "-1" value is unlikely to cause a conflict in your data because numeric attributes such as rating or length of article do not have a value of -1.

Creating a null value policy for items with no default

For further protection for null value attributes, you can determine how to handle attributes that have a null value and do not have a default value specified. You can choose to automatically include it for recommendation or automatically exclude it from recommendation. Use this procedure to create a policy.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:

   - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
   - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.

4. Under **Attribute Behavior in Rules Processing**, perform one of these tasks:

   - To exclude the item in recommendations, select **Treat any rule criteria in which it is used to have a result of TRUE** .
   - To include the item in recommendations, select **Treat any rule criteria in which it is used to have a result of FALSE**.

Creating an invalid attribute policy

For offers that use the legacy rules interface, you have two options for protection against invalid or malformed attributes: use the default value or stop processing the offer.

About this task

Use this procedure to create a policy. If you decide to use the default value, be sure that you set the default value. See "Specifying a default value for items with a null value" on page 70.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Attributes** under **Product Offers**.
3. Perform one of these actions:

   - If you are configuring page content offers, select **Page Attributes** under **Content Offers**.
   - If you are configuring element content offers, select **Element Attributes** under **Content Offers**.

4. For **Attribute Behavior in Rules Processing**:

- To continue processing the offer by using the default attribute value, select **Apply the default value to the attribute and continue processing the offer**.
- To stop the offer from processing and force the value to be corrected, select **Do not generate any recommendations for the offer, force correction of values before continuing**.

Field definitions for attributes and more settings

Reference information for Attributes and More Settings.

*Table 18. Reference information for **Offer Configuration** > **Product Offers** > **Attributes***

Field	Description
Attribute	Name of the attribute. This value is defined in the EPCMF.
Alias	Common name that is associated with the attribute. This value is defined in the EPCMF.
Data Type	Indicates the type of data that describes the alias. This value is defined in the EPCMF.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for image-based recommendations, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the image-based recommendation feature and picture view for previews. The attribute that provides the URL of a product's thumbnail image.
Attribute containing Product URL	Supports the image-based recommendation feature. The attribute that provides the URL of the item's main page on your website.
Use alternative prefix for images in image recommendations	Enable if you want to use a different prefix for image recommendations. Type the prefix in the text box.
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

*Table 19. Reference information for **Offer Configuration** > **Product Offers** > **More Settings***

Field	Description
Age of Data (session)	Click **Add time range** to add a time range for session-related data. The age of the data, in days, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight (session)	The value, as a percentage, is applied to the data that meets the value that is specified in the **Age of Data** field.
Age of Data (buy-to-buy)	Click **Add time range** to add a time range for buy-to-buy data. The age of the data, in days, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight (buy-to-buy)	The value, as a percentage, that is applied to the purchases that occur in the time period that is specified by the Days between events field.
File format	The following format options are available for your output files: • Tabular: Formats the data so that each row represents a single target and has as many columns as there are recommendations. • Serial: Formats the data so that each row represents a recommendation. With this format, each target has multiple rows (one for each recommendation).
Rank Type	The following values are used to indicate the priority of a recommendation: • Score - the affinity score that is calculated for the recommendation • Rank - the item's position in the recommendation list. That is, the item with the highest affinity score has the rank of 1.
Include file headers	For tabular files only. Indicates whether you want to include in the output the comments and metadata that describe the contents of the file. The value that you select depends on the data processing mechanism that uses the output files. Some mechanisms can strip out the header and others cannot. If your process cannot strip out the header, clear this option to suppress the file header.

*Table 20. Reference information for **Offer Configuration** > **Content Offers** > **Page View Attributes***

Field	Description
Attribute	Name of the attribute.
Alias	Common name that is associated with the attribute.
Data Type	Indicates the type of data that describes the alias.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for picture views for previews, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the picture view for previews. The attribute that provides the URL of an item's thumbnail image.

Table 20. Reference information for **Offer Configuration** *>* **Content Offers** *>* **Page View Attributes** *(continued)*

Field	Description
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

Table 21. Reference information for **Offer Configuration** *>* **Content Offers** *>* **Element Attributes**

Field	Description
Attribute	Name of the attribute.
Alias	Common name that is associated with the attribute.
Data Type	Indicates the type of data that describes the alias.
Default Value	The value that the batch data process provides if items in the data file being processed do not have a value that is specified for this attribute.
Attribute Prefix	In most cases, the attribute prefix is the value that is added to the beginning of the attribute value when it is included in response data. For attributes designated in the Special Values as URLs for picture view for previews, this value is used to construct URLs at run time.
Attribute containing Image URL	Supports the picture view for previews. The attribute that provides the URL of an item's thumbnail image.
Attribute containing Content Page URL	The attribute that provides the URL of the content page on your website.
If any attribute used in a rule has no value and a default was not specified	These options designate how to interpret items with null values for attributes that are evaluated by business rules. If you select TRUE, then an item with a null value for the attribute that is being considered is excluded in the recommendation list. If you select FALSE, it is included.
If any attribute used in a rule contains an invalid value in a comparison	These options designate what offer processing does with invalid attributes. Offer processing can either use the default value (if one is specified) or it can stop processing and display an error message.
Available	A list of all the attributes that can be used in the HTTP response data for a recommendation list that is to be displayed in a site zone on your website.
Selected	The attributes that are included in the HTTP response.

*Table 22. Reference information for **Offer Configuration** > **Content Offers** > **More Settings***

Field	Description
Age of Data	Click **Add time range** to add a time range for session-related data. The age of the data, in day, that is weighted by the value that is specified in the **Affinity Weight** field. For example, if you specify 3, then data older than three days old has the affinity weight specified.
Affinity weight	The value, as a percentage, is applied to the data that meets the value that is specified in the **Age of Data** field.
Pages to exclude from targets or recommendations in Page Content offers	Add the pages that you do not want to appear in recommendations. You can exclude pages that you never want to recommend from a content page, such as a home page or search results page.
Categories of elements to be included as targets or recommendations in Element Content offers	Add the element types that you want to include as targets for element content offers. Categories can include PDF downloads, video views, and other element-tagged specific content. If left blank, all element types are used.

Recommendation plans

Use recommendation plans to define the targets to use to generate recommendations, which offer to use, and what header text to show on the banner of the zone.

You also specify a fallback recommendation, which is the last recommendation request in the recommendation plan to be evaluated. If you still are not getting the required number of recommendations, the default fallback processing is used. For more information, see "Default fallback processing" on page 82.

You can configure multiple recommendation plan requests. The requests are processed in order until your recommendations are delivered.

Recommendation plan workflow

Use this procedure to configure a recommendation plan.

1. Create a single-step recommendation plan. This plan includes the primary recommendation request and a fallback. Refer to "Creating a single-step recommendation plan" on page 75.
2. If necessary, add more relevant, or a larger number of recommendations by adding steps and personalization to your recommendation plan. Refer to "Adding steps and personalization to your recommendation plan" on page 76.

Creating a single-step recommendation plan

Use this procedure to create a simple, one-step recommendation plan.

Procedure

1. Select a business case for your recommendation plan. Refer to "Business cases for selecting targets" on page 77.
2. Start the **Recommendation Plan List** page by selecting the **Recommendation Plan** link from the side navigation pane.
3. Click **Create New Recommendation Plan** to start the Recommendation Plan Settings Panel.

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4. Enter a **Recommendation Plan Name**.

   Defined recommendation plans are listed in the Zone settings panel. Give the recommendation plan a name that is descriptive of its use, for example, "Recent Cart Activity Recommendation Plan".

5. Enter a **Recommendation Plan Name**.

   Defined recommendation plans are listed in the Zone settings panel. Give the recommendation plan a name that is descriptive of its use, for example, "Home Page".

6. Enter a **Recommendation Plan Description**.

   This description is for informational purposes only. It is intended to remind users of the intent of the recommendation plan.

7. Set the values in the **Recommendation Plan** table based on the business case you selected in step .

8. In the **Offer** drop-down list, select from the list of active offers to use for the target you selected. If an offer does not display, be sure that it is activated.

9. In the **Zone Header Text** field, enter the text to be displayed on the banner of any site zone, which uses this recommendation plan. You can enter up to 96 characters.

10. Specify a Fallback process. The fallback process determines what happens if recommendations for all preceding requests are not available. Select a Target, Offer, and Zone Header text for the fallback offer. You have the additional option of selecting **No recommendations**. If you select **No recommendations**, then no recommendations are generated if your recommendation plan does not produce recommendations. You use No recommendation only in special circumstances.

    For an example, refer to

11. Click **Save and Close**.

Adding steps and personalization to your recommendation plan

You can use these additional steps ensure that you have enough recommendations.

About this task

At a minimum, you need one Request recommendation plan and one Fallback. This plan is enough in most circumstances. However, you can add more steps in your recommendation plan. The additional steps are run in order until your recommendations are delivered. You can configure up to six steps in your recommendation plan, plus one fallback. The fallback recommendation is used only when all other requests are exhausted.

Procedure

1. Select a business case that you want to add to your recommendation plan. Refer to .

2. Select the recommendation plan to which you are adding a step.

3. Click **Add Request** in the recommendation plan.

4. Specify the Target, Offer, and Header text for the additional request.

Business cases for selecting targets

You select a target in your recommendation plan

Table 23. Product recommendation plan targets		
Business Case	**What to select for Target**	**Information**
Generate recommendations from a list of specific products	Specified Product ID	You can use this option with multiple products. Refer to "Configuring a step in your recommendation plan to use multiple targets" on page 79.
Generate recommendations from a specific category	Specified Category ID	Uses a category ID for recommendations. You need to code the category ID that you want recommendations for in position 3 of the cmRecRequest function. Refer to "The cmRecRequest function" in the Acoustic Product Recommendations Configuration Guide for more information.
Generate recommendations for search terms.	Specified Search Term	Uses the visitor's most recent page views and search phrases for recommendations. You need to code the search term that you want recommendations for in position 5 of the cmRecRequest function. Refer to "The cmRecRequest function" in the Acoustic Product Recommendations Configuration Guide for more information.
Generate recommendations for attribute values.	Specified Attribute Value	Uses attribute value(s) for recommendations. You need to code the attribute(s) value that you want recommendations for in position 6 of the cmRecRequest function. Refer to "The cmRecRequest function" in the Acoustic Product Recommendations Configuration Guide for more information.
Personalize recommendations by generating recommendations based on products the user recently viewed.	Last Viewed Product	Uses the visitor's most recently viewed product as the target product for recommendations. This recommendation is determined by data that is received in the last Acoustic Digital Analytics product view tag. You can use this option with multiple products. Refer to "Configuring a step in your recommendation plan to use multiple targets" on page 79.

Table 23. Product recommendation plan targets (continued)

Business Case	What to select for Target	Information
Personalize recommendations by generating recommendations based on products the user recently purchased.	Last Purchased Product	Uses the visitor's most recently purchased product as the target product for recommendations. This recommendation is determined by data that is received in the last Acoustic Digital Analytics shop9 tag. You can use this option with multiple products. Refer to "Configuring a step in your recommendation plan to use multiple targets" on page 79.
Personalize recommendations by generating recommendations based on products the user recently carted but not purchased.	Last Carted Product	Uses the item the visitor last added to their cart as the target product for recommendations. This recommendation is determined by the last item that is received in an Acoustic Digital Analytics shop5 tag. You can use this option with multiple products. Refer to "Configuring a step in your recommendation plan to use multiple targets" on page 79.
Personalize recommendations by generating recommendations that are associated with last category the user viewed.	Most Recently Viewed Category	
Personalize recommendations by generating recommendations that are associated with the category the user most frequently views.	Visitors Most Popular Category	Uses the visitor's most popular category as the target category for recommendations. This recommendation is determined by tracking, for each visitor, the EPR categories of products that are viewed, carted, and purchased through responses to the recommendation request. Categories are then ranked for each visitor. The category that receives the most interaction receives the highest ranking and becomes the visitor's most popular category.

Note: This target is always based on Enterprise Product Report (EPR) categories. Categories that are defined in the Category Definition File (CDF) are not supported for use in personalization because of complications from virtual categorization in the CDF. |
| Personalize recommendations by generating recommendations based on the user's most significant purchase. | Most Significant Purchase | Uses the visitor's most significant purchase as the target product for recommendations. This recommendation is determined by the largest purchase (based on price) that occurred within the last 6 purchases. |

Table 24. Content recommendation plan targets		
Business Case	**What to select for Target**	**Notes®**
Generate recommendations from a list of specific pages	Specified Page ID	You can use this option with multiple pages. Refer to "Configuring a step in your recommendation plan to use multiple targets" on page 79.
Generate recommendations from a specific page category	Specified Page Category ID	Uses a page category ID for recommendations. You need to code the page category ID that you want recommendations for in position 3 of the cmPageRecRequest function. Refer to "The cmPageRecRequest function" in the Acoustic Content Recommendations Configuration Guide.
Personalize recommendations by generating recommendations based on pages the user recently viewed	Last Viewed Page	Uses the visitor's most recently viewed page as the target product for recommendations. This recommendation is determined by data that is received in the last Acoustic Digital Analytics page view tag. You can use this option with multiple pages. Refer to Configuring a step in your recommendation plan to use multiple targets.

Configuring a step in your recommendation plan to use multiple targets

You can improve the personalization of a recommendation by basing a recommendation on multiple targets, providing more focused recommendations, or a greater variety of recommendations.

About this task

Here are some examples for how you can use multiple targets to improve recommendations:

- You want to help your customers complete an outfit. For example, a customer is viewing a sweater, but they also viewed jeans, and a pair of boots. You can use multiple targets to identify accessories that go with the sweater, boots, and jeans: such as jewelry, jackets, and hats to present a cohesive outfit.

- You want to make sure that recommendations are based on a customer's largest purchase. For example, a customer purchases an air compressor and masking tape. You want recommendations to be based more on the air compressor than the masking tape.

- You want to expand the number of recommendations by basing them on the several of your customers' last purchases rather than the user's last single purchase.

Here are some examples for how you can use this feature to improve recommendations:

- You want to help your customers complete a meal. For example, a customer is viewing a recipe for a main course, but they also recently viewed a recipe for green beans, and apple pie. You can use multiple targets to identify other recipes that go with the main course, green beans, and apple pie: such as baked potatoes, and a salad to present a complete meal.

- You want to make sure that recommendations are based on a customer's primary component. For example, a customer purchases a new computer and a mouse. You want support articles to be based more on the computer than the mouse.

- You want to expand the number of recommendations by basing them on the several of your customers' last viewed articles rather than the user's last single article.

Use this process to configure your recommendation plan for multiple targets:

Procedure

1. Identify the recommendation plan in which you want to use multiple targets personalization.
2. Identify the multiple target algorithm that you want to use for generating the recommendations. Refer to "Multiple target algorithms" on page 80.
3. Select a recommendation plan.
4. Select the step in the recommendation plan to change to a multiple target recommendation step, or click **Add Request** to create a new step.
5. Select one of the **Target** options listed that support multiple targets.

   - Specified Product ID
   - Last Viewed Product
   - Last Purchased Product
   - Last Carted Product

6. Select one of the **Target** options listed that support multiple targets.

   - Specified Page ID
   - Last Viewed Page

7. Enable the **Use multiple targets** option.
8. Select the algorithm to you identified from "Multiple target algorithms" on page 80. If you selected **Target with highest value for attribute**, select the attribute to use.
9. Save the plan.

Results

If you selected Specified Product ID as your target, you must code the product IDs that you want recommendations for in position 2 of the cmRecRequest function. Refer to "The cmRecRequest function" in the Acoustic Product Recommendations Configuration Guide for more information.

If you selected Specified Page ID as your target, you must code the page IDs that you want recommendations for in position 2 of the cmPageRecRequest function. Refer to Acoustic Content Recommendations Configuration Guide for more information.

Multiple target algorithms

The follow tables describe the different multiple target algorithms.

Table 25. Multiple target algorithms		
Business Goal	**Algorithm to use**	**How recommendations are generated**
You want the recommendations ordered based on the value of some attribute of one of the target products. For example, by using price as an attribute, you can generate recommendations based on the price of user's previous purchases. You want recommendations from the purchased product with the highest price presented first.	Target with highest value for attribute	Recommendations are generated based on multiple recently viewed products. Recommendations based on the highest priced product are presented first.

Table 25. Multiple target algorithms (continued)

Business Goal	Algorithm to use	How recommendations are generated
You want to order the recommendations based on the strength of the affinity with multiple target products. For example, you want to generate recommendations based on the affinity score of the last 6 products the user carted.	Affinities to multiple targets	Recommendations with a strong affinity to multiple carted products are presented first. For example, if a recommendation has a strong buy-to-buy affinity with all of the last carted products, it is presented first. If a product has only a strong buy-to-buy affinity with only one of the carted products, it is presented further down the list.
You want to recommend the user's most recently viewed products. This option is only available for Last Viewed Product.	Targets as recommendations	The last viewed products are presented as recommendations.
You do not have a certain preference that you want the recommendations to be ordered.	Even distribution among targets	Recommendations for the most recent target are presented first. When the list is cycled through, it starts again from the beginning.

Table 26. Multiple target algorithms

Business Goal	Algorithm to use	How recommendations are generated
You want the recommendations ordered based on the value of some attribute of one of the target pages. For example, by using rating as an attribute, you can generate recommendations based on the rating of user's most recently viewed recipes. You want recommendations from the viewed page with the highest rating presented first.	Target with highest value for attribute	Recommendations are generated based on multiple recently viewed pages. Recommendations based on the highest rated recipe are presented first.
You want to order the recommendations based on the strength of the affinity with multiple target pages. For example, you want to generate recommendations based on the affinity score of the last 6 pages the user viewed.	Affinities to multiple targets	Recommendations with a strong affinity to multiple viewed pages are presented first. For example, if a recommendation has a strong affinity with all of the last viewed pages, it is presented first. If a recommendation has only a strong affinity with one of the viewed pages, it is presented further down in the list.
You want to recommend the user's most recently viewed pages. This option is only available for Last Viewed Page.	Targets as recommendations	The last viewed pages (up to 6) are presented as recommendations.

Table 26. Multiple target algorithms (continued)		
Business Goal	**Algorithm to use**	**How recommendations are generated**
You do not have a preference for how the recommendations are ordered.	Even distribution among targets	Recommendations for the most recent target are presented first. When the list is cycled through, it starts again from the beginning.

Fallback processing

You can prevent too few recommendations by having a fallback process.

After you create an offer and recommendation plan, it is possible that Digital Recommendations cannot generate the required number of recommendations for a target. A lack of recommendations can happen if there is limited data on a target, the rules that you configured in an offer restrict too many recommendations, or the target received fewer than 5 views in the Data Analysis Time Period.

To prevent too few recommendations, Digital Recommendations provides a default fallback process.

Default fallback processing

If you don't configure a fallback step to your recommendations plan, there is a default fallback process.

The default offer/rule fallback process is started when each offer is processed. After offer settings and business rules are processed, Digital Recommendations will validate whether the requested number of recommendations generate. If more recommendations are needed for a target, Digital Recommendations locates the top selling items in the target's EPR category and inserts those items into the offer. This process is run for every item in the offer every time an offer is processed.

If you use dynamic delivery, the default fallback process happens automatically. However, if for any reason, dynamic recommendations are not available when your website requests them, configure the fallback step in the recommendation plan. Refer to "Adding steps and personalization to your recommendation plan" on page 76

Note: All offer/rule category fallback recommendations are subject to the business rules that are in place within the offers.

The default offer/rule fallback process is started when each offer is processed. After offer settings and business rules are processed, Digital Recommendations will validate whether the requested number of recommendations generate. If more recommendations are needed for a target, Digital Recommendations locates the top viewed items in the target's category and inserts those items into the offer. This process is run for every item in the offer every time an offer is processed. The default fallback process happens automatically. However, if for any reason, dynamic recommendations are not available when your website requests them, configure the fallback step in the recommendation plan. "Adding steps and personalization to your recommendation plan" on page 76

Note: All offer/rule category fallback recommendations are subject to the business rules that are in place within the offers.

Configuring fallback processing for flat file delivery

You can avoid too few recommendations when flat file delivery is used.

About this task
For Flat File implementation, you define the number of recommendations by using the **Number of Recommendations** field in the Delivery Options of the Offer. To avoid having too few recommendations, follow these steps:

Procedure

1. Open the offer that you are configuring.
2. In the Delivery Options group, select **Enable Recommendation Fallback**.

Search term recommendation plan best practices

Follow these best practices when you create search term-based recommendations plans.

Refer to Search Term-based `cmRecRequest` Best Practices in the Acoustic Product Recommendations Configuration Guide.

On-site search recommendations:

• Ensure that a "Search Recommendations" offer type is established.
• Set up the recommendation plan so that one step equals "Specified Search Term".

Typical paid search landing page recommendations:

• Category
• Search results
• Product pages
• Category pages
• If you have or want category recommendations on the category pages:
  – Set up a recommendation plan where the first step is "Specified Search Term" and the second step is "Specified Category ID".
  – If a search term is present, present recommendations in the recommendation zone that are based on the search term.
  – When the search term is not present, present top selling items for the category on which they landed.
• If you do not want category top seller recommendations, create only a one step in the recommendation plan.
• Paid search traffic that is routed to onsite search landing pages:
  – Assume that the recommendation zone is used for all sources of search traffic.
  – Create the recommendation plan with one step: "Specified Search Term".
• If paid search traffic is routed to item detail pages, do not base recommendations on the search term.

Configuring Site Zones

A zone refers to a position on a web page where recommendations are rendered by the visitor's browser through Digital Recommendations dynamic recommendations.

About this task
Each zone has a unique eight-character ID that you enter in the **Zone Setting** window and reference on your web pages. To identify the zones to Digital Recommendations, complete the following steps.

Procedure

1. Start the **Zone List** page by selecting the **Zone** link from the side navigation pane.
2. Click **Create New Zone** to start the **Zone Settings** pane.
3. Enter a **Zone Name**.
   Use a description that helps to describe exactly where this zone is located. For example: Page Zone Upper Right.

4. Enter up to 8 characters to define the **Zone ID**. This value is case-sensitive and can contain only alphanumeric or underscore characters. Do not use spaces or any special character other than underscore.

   This ID is used across the application. It is sent in each recommendation request to indicate which zone to use for the request. The page developer who encodes the recommendation request needs the configured zone ID for each active zone on the site.

   Important: The zone ID that is passed in the recommendation request must exactly match the zone ID that you specify in this field.

5. Select from previously defined Recommendation Plans. If a plan does not exist, click **cancel** and go to the **Recommendation Plan** list page to create one.

6. Enter the **Number of Recommendations** that are passed to the zone.

   If you have multiple zones on one page, always send more recommendations than the zone is able to display. Passing extra zones prevents you from having too few recommendations when items are recommended for more than one zone.

7. Set **Recommendation Filtering**.

   These selections remove previously purchased items and items in the visitor's cart from recommendations.

8. Click **Save and Close**.

Creating a zone that is visible only if the recommendation plan is valid

If no recommendations are produced in a zone, you might not want the zone to appear on your page.

About this task

You can configure a recommendation plan so that a zone is only visible if a recommendation plan request produces valid results. For example, on the home page, you can specify a zone to display with recommendations at the bottom of the page only if the visitor added an item to their cart. If they do not have items in their cart, they do not see the zone.

You can configure a recommendation plan so that a zone is only visible if a recommendation plan request produces valid results. For example, on the home page, you can specify a zone to display with recommendations at the bottom of the page only if the visitor viewed items. If the customer did not view items, they do not see the zone.

Procedure

1. Create a recommendation plan that contains at least one request step. Continuing with the example, select **Last Carted Product** as the Target.

2. Create a recommendation plan that contains at least one request step. For example, select **Most Recently Viewed Page List**.

3. For the Fallback, select **No Recommendations**.

4. Create a Zone by using **Zones** from the side navigation pane.

5. In the zone configuration, select the Recommendation plan that you created in steps 1-2.

Personalize product recommendations

Use Digital Recommendations to build individual visitor profiles based on historical and in-session data.

Because no two visitors have the same interests nor demonstrate identical shopping patterns, Digital Recommendations uses its `wisdom-of-the-crowd` algorithms to automatically present each shopper a unique set of recommendations. Since visitor profiles are constructed in real time, recommendations are quickly personalized. Quick personalization allows Digital Recommendations

to optimize recommendations for every visitor. Visitors who are not known also receive relevant recommendations. Previous purchases and currently carted items can be automatically removed from recommendations as a configurable setting.

In addition to automatically optimizing product page, cart recommendations, and category recommendations to the individual, specific recommendations zones can be defined in the recommendation plan. This plan to offer recommendations that are based on the following customer data:

- An item recently carted.
- An item that was recently purchased.
- Top selling items from a category of interest.
- An item that was recently viewed.
- Top Selling items from the Last Viewed Category
- Recently Viewed Product List

Personalization and Enterprise Product Report Categories

The category structure that is defined in the Enterprise Category Definition File (ECDF) of the Enterprise Product Report (EPR) import forms the basis for categories. These categories are used in the Digital Recommendations personalization algorithm, regardless of whether category recommendations are based onsite categories (Category Definition File categories) or EPR categories (Enterprise Category Definition File categories). For the purposes of personalization, CDF categories cannot be used because of their use of virtual categories. Data integrity issues result in the delivery of recommendations that are either invalid or that do not have relevancy to the visitor. The EPR categories provide a clean and consistent set of categories that contribute to the personalization algorithm.

Personalization Category

A setting can be enabled to increase the affinity weight for a recommendation candidate that has a category ID that matches the visitor's that are most popular in the personalization cookie. This setting can be used with product and search offers.

Extra Personalization Attribute

As an optional configuration, you can define one attribute from the Enterprise Product Report file to be used as extra input to the personalization algorithm. If the defined attribute value of the recommendation matches the attribute value of the target, the affinity weighting is increased by a predetermined value set by the client. Attributes that are considered are brand, author, or genre. This additional attribute is not fundamental to the personalization algorithm and is provided as an option. This option can be used with product and search offers.

Note: This setting is on the **Advanced Settings** tab in the **Offer Configuration** window. You might need to contact Digital Analytics support for help with this setting.

Tracking EPR Data in the Product Recommendations Personalization Cookie

Every time a visitor views, carts, or purchases an item, the library updates the EPR category and the optional personalization attribute, and the scoring of that information in the Digital Recommendations personalization cookie. There are no specific tasks for you to do to ensure that these actions happen beyond defining and maintaining EPR data. For more information, see "Product recommendation cookies" in the Acoustic Product Recommendations Configuration Guide.

Every time a visitor views, carts or purchases an item, the library handles updating the EPR category and optional personalization attribute and the scoring of that information in the Digital Recommendations personalization cookie. There are no specific tasks for you to do to ensure that these actions happen beyond defining and maintaining EPR data. For more information, see "Content recommendation cookies" in the Acoustic Content Recommendations Configuration Guide.

Personalizing by assigning products to segments

You can personalize recommendations that are based on the segment or group that a visitor is associated with.

Before you begin

This procedure requires an understanding of the EPCMF file. Refer to The EPCMF in the Acoustic Product Recommendations Configuration Guide.

About this task

If you assign visitors to a specific segment or group based on visitor preferences, you can use this procedure to exclude or de-emphasize recommendations based on their segment or group.

For example, when a user creates an account they might have the choice to identify themselves as a male or female. Or, as part of a specific industry such as food services or hospitality. If your products also align with this segment or group, you can choose to filter recommendations based on segment or group that is assigned to a visitor.

As another example, if your company has multiple, unrelated product lines, you can define a segment that associates each product with a product line. Then, when your visitor is identified with a segment, you can exclude all recommendations that are not in that product line.

Procedure

1. Work with your Digital Analytics Client Consultant to determine whether to exclude or de-emphasize products that do not match the visitor's segment. Also, determine which site zones this filter applies to and the attribute you want to use for filtering. Your consultant configures these items for you.
2. Create a column in your EPCMF for the segment attribute.
3. Define one or more segment values for each product. Separate multiple values with a delimiter such as | or ^.
4. In the Digital Recommendations interface, select **Manage** > **Offer Configuration** > **Product Offers** > **Attributes**.
5. In the **Product Attributes Definition** table, define the following values for the **Enterprise Product Static Attribute** associated with the segment attribute:

Option	Description
Alias	segment
Data Type	Text
Default	The segment value that you want assigned for products that do not have a value that is defined in the EPCMF.

6. In the **Attributes to include in Offer Response**, move the `segment` attribute to **Selected**.
7. Save the configuration.
8. Code `cmSetSegment` into your web pages.

    Refer to "cmSetSegment Function" on page 87 for more details about this function.

Results

Because this procedure changes the EPCMF, you must wait until the next morning when the new EPCMF is uploaded to see results.

cmSetSegment Function

Use this function to identify the segment that a visitor is associated with.

Pass this function one time per session. It must be passed after `eluminate.js` library and before the `cmDisplayRecs` function.

When this function is passed during the session, recommendations whose segment value in the EPCMF does not match the visitor's segment value are excluded or de-emphasized. For example, a visitor identifies as a hospitality user. When recommendations are presented, products that are not assigned to the hospitality segment are recommended last (de-emphasized) or not recommended at all (excluded). This presentation order ensures that the most relevant recommendations are aligned with a user segment.

Parameters

The `cmSetSegment` function takes the following parameter:

Table 27. cmSetSegment response parameters		
Parameter	**Valid parameter values**	**Example**
`segment`	The segment that the visitor is associated with. You need to populate this value from your session data. If the value of the segment parameter is blank, the visitor is removed from the segment they were assigned. If a new `segment` value is passed, the previous value is overwritten.	`cmSetSegment('hospitality')`

Personalize by synchronizing cookie data across devices

You can personalize recommendations by using tracking cookies on more than one computer, smartphone, or tablet.

Because cookies are stored locally on your visitor's device, it is difficult to track and use the information in cookies that are stored on difference devices. For example, a visitor accesses your site from their work computer. The next day, they return by using a mobile device. The cookie data on the work computer is not available to generate personalized recommendations on the mobile device. When they return by using their work computer, the cookie data on the mobile device is not available to generate personalized recommendations on the work computer.

To address this limitation, Digital Recommendations can track the information in your visitor's cookies across multiple devices.

To accomplish this, Digital Recommendations associates the personalization data from your visitor's device to their registration ID. When the user visits your website from a device on which they logged in using their registration ID, Digital Recommendations is able to associate activities that are captured and stored in the Digital Analytics database to that registration ID. When your visitor returns to your site by using another device on which they logged in using their registration ID, the data from the second device is also stored in the database. When the user returns to your website from either device, all data in the database is added to the local cookie and is now available to generate personalized recommendations on either device.

To enable this capability, you need to contact your IBM representative. You also need to decide how to configure the opt-in requirement. Opt-in configuration determines whether visitors to your site are opted in or opted out by default and affects how you use the opt-in indicator on calls to the cmSetRegId function. The cmSetRegId function accepts an opt-in indicator, but the indicator is only required if the visitor's opt-in state is not the default. Your choices are shown in the following table:

Table 28. Opt-in Options

Option	Description
Mandatory	Select Mandatory opt-in to have visitors opted out by default if no opt-in indicator is specified on the cmSetRegId call. To opt-out a visitor, set the opt-in indicator on each call to cmSetRegId to **false** or leave blank. To opt-in a visitor, set the opt-in indicator on each call to cmSetRegId to **true**. See "Synchronize cookie function" on page 88.
Default	Select Default opt-in to have visitors opted in by default if no opt-in indicator is specified on the cmSetRegId call. To opt-out a visitor, set the opt-in indicator on each call to cmSetRegId to false. To opt-in a visitor, set the opt-in indicator on each call to cmSetRegId to true or leave blank.

The ability to synchronize cookie data has the following limitations:

- The database is updated nightly, so user data from multiple devices is not available until the next day. For example, a user visits your site during the day from a notebook computer. That evening, they return to your site by using a tablet. Any personalization data that is collected on the notebook computer is not available on the tablet. However, if they return to your site by using the tablet the following day, the personalization data from the notebook computer is available on the tablet.
- Data from a cookie is only loaded in the database from a device in which the user logged in with their registration ID. If they never logged in from a device, the server cannot collect the data from the cookie on that device. For example, a user browses your site from their work computer on which they never logged in with their registration ID. The next day, they visit your site from their home computer, on which they logged in with their registration ID. The data that is collected on their work computer is not available on their home computer for generating personalized recommendations.

Synchronize cookie function

Use this function if you implemented the feature to synchronize your visitor's cookie data across multiple devices. This feature must be enabled by your IBM representative.

cmSetRegId Parameters

The cmSetRegId function takes two parameters in the following order:

Table 29. cmSetRegId response parameters

Position	Parameter	Valid parameter values
1	Registration ID	The registration ID of the visitor, loaded from the visitor's cookie (if they are opted in).
2	Opt-in indicator	true - the visitor did opt in to allow cookie synchronization. false - the visitor did not opt in to allow cookie synchronization. This parameter is optional, depending on how you configured the opt-in requirement.

Example `cmSetRegId` function call:

```
cmSetRegId('52D8177F5751', true);
```

For more information, see "Personalize by synchronizing cookie data across devices" on page 87.

User privacy for synchronizing cookies

Understand the privacy implications of tracking cookies across multiple devices.

Because this function can update the local Digital Recommendations cookie with information that is gathered from another user-associated device (or devices), carefully consider the privacy of visitors to your site.

As part of implementing this feature, you decide whether a visitor's opt-in to this additional cross-device information sharing is automatic or manually required.

- If you decide to use manual opt-in, you must make a cmSetRegId call on behalf of the visitor to a function in the Digital Recommendations JavaScript.
- If you decide to use automatic (Default) opt-in, the `cmSetRegId` opt-in call is not required on an on-going basis. The visitor is assumed to be opted-in unless Digital Recommendations receives the `cmSetRegId` call, specifically opting out the user. However, you must make at least one `cmSetRegId` call on behalf of the visitor on each device to set the visitor's registration ID for that device

If a visitor is opted-in either by automatic or manual method, the Digital Recommendations local cookie can be modified to contain product activity that occurred on other devices that the visitor used to browse the customer's site. If a visitor registered by using their registration ID on more than one device, then a link that uses that registration ID can be established on the Digital Analytics server between those devices (which have their own local Digital Recommendations cookie). Digital Analytics activity is gathered by registration ID and the activity is stored on a Digital Recommendations server. As a result, when the visitor visits the site, the new synchronization processing might call the Digital Recommendations server and receive activity from those associated devices.

If a visitor is opted-out on a device, it applies only to that device, not to all devices on which the user registered. Opt-out prevents the local device from receiving data from other associated devices. It does not prevent activity from this device from being shared with other associated devices that are opted-in.

If you do not implement the cookie synchronization feature, Digital Recommendations creates and uses a browser cookie only if the user also allows the Digital Analytics cookie. The Digital Recommendations cookie is persistent and does not collect any personal information. It collects only some tracking information and a limited number of product IDs and associated time stamps that the user browsed, carted, or purchased. It encrypts that data within the Digital Recommendations cookie.

Test recommendations and rule output

You can avoid unexpected results by testing your rules before you put them into production.

To ensure that exclusionary rules are not too restrictive and that all rule data is set up correctly, and that affinity weights are giving the expected result, run and inspect at least one test file before you put it into production.

To ensure that exclusionary rules are not too restrictive and that all rule data is set up correctly, run and inspect at least one test file before you put it into production.

When you set up an offer, you define whether you are interested in reviewing recommendation results for a specific set of items or for a sampling of items in the Preview Target List section on the **Settings** tab. Be sure to activate the offer, and after it runs you can use the Preview feature to review the results. For more information, see "Preview recommendations" on page 19 .

Another method that you can use for troubleshooting offers is the Rules Statistics. Using this tool, you can view the impact of rules you put in place by showing you the number of items that a rule excluded. For more information, see "Viewing the effect of rules on the offer" on page 46.

Guidelines for testing

- Many organizations set up a development server where the recommendations are loaded and can easily be previewed during the initial implementation phase of Digital Recommendations. This development server helps your team get comfortable with the output from Digital Recommendations.
- Inspect preview results to ensure that the expected number of recommendations is present.
- Ensure that your sample targets test each business rule. For example, for a rule that specifies that for all items in the men's department, exclude women's items, then test at least one men's item and inspect its recommendations. Do women's items appear in the list?
- Confirm that affinity weights are providing the expected recommendations.

Test recommendations

If you are implementing Digital Recommendations for the first time, or if you are implementing dynamic recommendations for the first time, you can test your dynamic offer implementation.

1. Log in to Digital Recommendations with your supplied production client ID.
2. Set up the offers, rules, recommendation plans, and zones that you want to test in Digital Recommendations.
3. Create the corresponding site zones on a test website.
4. Ensure that the offers you created run successfully at least once.

Then, when a request for recommendations is received from your test website using your test client ID, the system automatically returns recommendations as though they are requested by your production client ID.

This automated process allows you to test your implementation of Digital Recommendations with real data that is under your production client ID before you launch or change your production website. Using your test site with your test client ID prevents the business reports for the production website from being affected.

If you already are running Digital Recommendations, you can use the same procedure to test new and changed zones, offers, or recommendation plans.

Testing recommendations

You can test your dynamic offer implementation when you implement Digital Recommendations or dynamic recommendations for the first time.

About this task

If you already are running Digital Recommendations, you can use the same procedure to test new and changed zones, offers, or recommendation plans.

This automated process tests your implementation of Digital Recommendations with real data that is under your production client ID before you launch or change your production website. Using your test site with your test client ID prevents the business reports for the production website from being affected.

Procedure

1. Log in to Digital Recommendations with your supplied production client ID.
2. Set up the offers, rules, recommendation plans, and zones that you want to test in Digital Recommendations.

3. Create the corresponding site zones on a test website.
4. Ensure that the offers you created run successfully at least one time.

Results

When a request for recommendations is received from your test website by using your test client ID, the system automatically returns recommendations as though they are requested by your production client ID.

Troubleshoot results of business rules

If the results of a defined business rule are not affecting the offer recommendations as expected, use this procedure to identify the issue.

1. Return to the **Rules** tab of the offer and examine it to ensure that the rule is set up correctly. Many merchants set up rules to specify "remove all items NOT on sale" when the intention was to "remove all items on sale".

2. Return to the **Rules** tab of the offer and examine it to ensure that the rule is set up correctly. It is common to set up rules to exclude items by using NOT logic and leave out the NOT option.

3. Understand your business rule policy, the implications of missing attribute data and the setting for this policy. If you have questions, examine the settings on the **Manage > Product Offers > Attributes** tab. If you do not have access to those settings, contact your administrator.

4. Understand your business rule policy, the implications of missing attribute data and the setting for this policy. If you have questions, examine the settings on the **Manage > Content Offers > Attributes** tab. If you do not have access to those settings, contact your administrator.

More troubleshooting steps for product recommendations:

1. When you enter a value into the rules tool, make sure that the value you enter exactly matches the values that are loaded by using the Enterprise Product Report files. For example, if the rule says exclude all items where the Brand equals Channel, but the Brand value in the Enterprise Product Content Mapping File is CHANNEL, the item is not excluded by the rule engine.

2. Make sure that the Enterprise Product Report (EPR) files are current. Many reported rule issues are the result of out-of-date EPR files.

3. The preview results show the values of data in the EPR file as of the time that the offer was run. For the items in question, inspect the values. Do they have the correct values to support the rules? Are the values in uppercase but entered in lowercase in the rule tool? Is there an extra space in the rule or the EPR data that causes a mismatch?

Troubleshoot too few recommendations

If targets have no recommendations while others have few recommendations, use this procedure to identify the issue.

1. The ability for Digital Recommendations to generate recommendations depends on the amount of traffic an item gets in the set data analysis time period and the degree to which the business rules eliminate items.

2. When business rules are set up, navigate to the **Rules Statistics** tab for the selected offer. The information in the table provides insight into the degree to which a specific rule is eliminating items from recommendations.

3. If a rule is eliminating too many recommendations, consider relaxing the rule or eliminating the rule altogether. Some rules are required, but many people conceptualize rules that are more experimental in nature. In some cases, more rules equate to fewer recommendations, which means less revenue lift.

4. For any rule that is applied to all targets, consider whether the rule needs to be applied to all targets. To achieve the wanted result, consider applying the rule to a specific category of items to prevent the rule from working against more items than necessary.

5. If an item has limited recommendations and rules do not seem to be the source, go to the Category report and set the time period of the report to match the data analysis time period of the offer that is being investigated. Find the item in question and see how many views and purchases it received in that time period. If the item is receiving little interaction, Digital Recommendations probably does not have enough data to generate recommendations. Consider extending the data analysis time period so that more data is captured. Remember, the ideal data analysis time period is the shortest window that gets the wanted amount of recommendation coverage.

6. Examine the affinity weights (product recommendations only). If view-to-view is set to 0, most of the data available for making recommendations is turned off. Consider opening this affinity up to a small weight of at least 5 or 10, and rerun the offer to gauge the effect.

System overview dashboard

The system dashboard provides you with an easy way to see all of the aspects of your recommendation strategy. You can quickly navigate to the appropriate pane to adjust configurations as required.

Following are some examples of using this dashboard.

- You can view all of your configured site zones and their relationships with recommendation plans and offers, and key parameter settings. You can also edit each of these components by clicking zone, recommendation plan, or offer name from the dashboard.
- Identify which zones are active.
- For A/B testing, you can view the recommendations plans that are used in the test and key parameters of the test.
- For image recommendations, you can view publish status, the offers that are used to generate recommendations, the fallback offer, and the number of recommendations generated.

You can also access the configuration settings by clicking the zone ID, recommendation plan name, A/B test name, or image recommendation template name.

Viewing a list of zones, offers, and recommendations plans

The **Active Zones** and **Inactive Zones** section of the system overview displays all of the site zones you configured in Digital Recommendations. The system overview shows what zones are active and which recommendation plan and offers are associated with each zone.

Procedure

Click **System Overview** in the side navigation pane. The zones are listed by zone ID. You can identify the zone name, recommendation plans, and offers. The following are other columns that are displayed:

Option	Description
#Recs	The number of recommendations that are generated for the zone.
Filtering	Identifies if previously carted or purchased items are filtered out.
Target	Identifies how the target is determined.
V2V	Identifies the view-to-view affinity setting in the product cross-sell algorithm.
V2B	Identifies the view-to-buy affinity setting in the product cross-sell algorithm.

Option	Description
B2B	Identifies the buy-to-buy affinity setting in the product cross-sell algorithm.
A2B	Identifies the abandon-to-buy affinity setting in the product cross-sell algorithm.
#Rules	Identifies how many rules are defined in the offer.

Comparing the algorithm used in different offers

You can use the system overview to compare the product cross-sell algorithms that are used in different offers.

About this task

You might want to configure zones in a way that you have different product cross-sell algorithms for difference zone locations. For example, on a cart page, you might want to have greater affinity for view-to-buy than you have for view-to-view. You can use the system overview to see what affinity settings are used across site zones.

Procedure

1. Click **System Overview** in the side navigation pane.
2. View the following column values for each zone:

Option	Description
V2V	Identifies the view-to-view affinity setting in the product cross-sell algorithm.
V2B	Identifies the view-to-buy affinity setting in the product cross-sell algorithm.
B2B	Identifies the buy-to-buy affinity setting in the product cross-sell algorithm.
A2B	Identifies the abandon-to-buy affinity setting in the product cross-sell algorithm.

Identifying which zones are active or inactive

You can use the system overview to quickly see which site zones are active and inactive.

Procedure

1. Click **System Overview** in the side navigation pane.
2. Expand the **Active Zones** and **Inactive Zones** sections.

Identifying the number of recommendations

You can use the system overview to see how many recommendations are generated for a zone.

Procedure

1. Click **System Overview** in the side navigation pane.

   The zones are listed by zone ID.
2. Expand the **Active Zones** and **Inactive Zones** sections.
3. Find the zone that you want to look at. The **#Recs** column displays the number of recommendations generated.

Identifying the number of recommendations for an image recommendation template

You can use the system overview to find the number of recommendations generated.

Procedure

1. Click **System Overview** in the side navigation pane.
2. Expand the **Image Recommendations** section.
3. Find the template that you want to look at. The **#Recs** column displays the number of recommendations generated.

Identifying or compare the parameters of one or more A/B tests

You can use the system overview to identify or compare parameters of A/B tests.

Procedure

1. Click **System Overview** in the side navigation pane.
2. Expand the **Active A/B Tests** section.
3. Find the A/B tests that you want to look at.

   You can access configuration parameters for the A/B test and the associated recommendation plans and offers.

Identifying inactive recommendation plans and zones

You can use the system overview dashboard to determine if any recommendation plans or zones are inactive.

Procedure

1. Click **System Overview** in the side navigation pane.
2. Look through the system overview dashboard for any recommendation plan names, or zones that are in red text. Red text indicates that the element is inactive.
3. Click the element name to open the configuration screen.

Identifying every instance that an offer is used

You can use the system overview to quickly identify where an offer is used in the system. This procedure highlights all instances of an offer in every section of the system overview.

Procedure

1. Click **System Overview** in the side navigation pane.

2. Expand any of the system overview sections (Active Zones, Inactive Zones, Active A/B Tests, Image Recommendations).

3. Locate any instance of the offer you are interested in.

4. Double-click the offer name.

   The offer name is highlighted in every instance that it is used.

Identifying every instance that a recommendation plan is used

You can use the system overview to quickly identify where a recommendation plan is used in the system. This procedure highlights all instances of a recommendation plan in every section of the system overview.

Procedure

1. Click **System Overview** in the side navigation pane.

2. Expand any of the system overview sections (Active Zones, Inactive Zones, Active A/B Tests, Image Recommendations).

3. Locate any instance of the recommendation plan that you are interested in.

4. Double-click the recommendation plan name.

   The plan name is highlighted in every instance that it is used.

Identifying recommendation plans that are overridden by an A/B test

You can use the system overview to identify which zones are overridden.

About this task
When you run an A/B test in a zone, it overrides the recommendation plan that is originally specified for the zone.

Procedure

1. Click **System Overview** in the side navigation pane.

2. Look for the yellow exclamation point icon next to the recommendation plan name. The exclamation point indicates that the A/B test is overriding the plan.

Reports

Reports provide information about the performance of your recommendations.

Digital Recommendations provides the performance reports and the A/B test performance report.

Product zone performance reports

The product zone performance reports present information that is related to the value of recommendations that are delivered by Digital Recommendations. You can see information for products, both site-wide and broken down by categories (for example, zones and any subcategories within those zones).

You can add categories to the chart by using the check boxes in the Table section below the chart.

For product offers, use the **Manage** > **Report Configuration** > **Product Zone Performance** function to select the parent category from the Category Definition File that you use to track sales that are driven by Digital Recommendations.

Automated zone performance tracking

You can use automated zone performance tracking to automatically maintain a valid Acoustic Digital Recommendations CDF structure. Automated zone performance tracking also adds a virtual category tag to each product page URL that is presented in your recommendation zone.

After you enable automated zone performance tracking, the following actions run automatically:

- When you send your CDF structure to be loaded into Digital Analytics, all active product-based Zone IDs are added as child categories of your parent recommendations category.
- `cm_vc=Zone_id` appends to your product URL before it passes to your Zone population function.

No further actions are needed to track your recommendations while automated zone performance tracking is enabled.

Activating automated zone performance tracking

You can use automated zone performance tracking to automatically provide a valid CDF structure and add a virtual category tag to each product page URL that is presented in your recommendation zone.

Before you begin

Before you enable automated zone performance tracking, you must verify that you are passing the product URL of each product in the EPCMF file. Make sure that you designate which attribute contains this product URL and include the attribute in your offer response fields. You must also configure your product offer attributes following these steps.

1. Click **Manage > Product Offers > Attributes** in the side navigation pane.
2. Select the appropriate **Product URL** attribute in the **Special Values** section.
3. If the attribute you select is not shown in the **Selected** list under **Attributes to Include in Offer Response** section, select the attribute from the **Available** list and click the **>** button arrow to move it to the **Selected** list.

About this task

To activate automatic zone performance tracking for Acoustic Product Recommendations, complete the following steps.

Procedure

1. Click **Manage > Report Configuration > Product Zone Performance** in the side navigation pane.
2. Choose the parent category that you use to track recommendations from the **Category Definition File Hierarchy** drop-down.
3. Click the **Use Automated Tracking** check box.
4. By default, **Zone granularity** is selected.
5. Click **Save**.

What to do next

Click **Zones** in the left navigation to view the status of your automated product zone performance configuration. Also, an email is sent that confirms the success of the implementation of automated zone performance tracking or issues a warning if the Zone ID needs to be changed. The Zone ID must be unique.

A/B test performance report

You can use the A/B testing function only if your site is implemented by using dynamic recommendations.

The A/B test performance report is sourced from the Digital Analytics Elements reports and displays results for any active A/B test that is configured in the A/B test tool in Digital Recommendations.

You can view many metrics in this report, including lift metrics. Lift metrics are calculated as (test split metric - control metric) / control metric.

Indirect attribution report

You use the indirect attribution report to view the impact that recommendations have across multiple sessions.

The impact of recommendations is often attributed to the session in which a recommendation is viewed. For example, a customer is viewing a product and sees a list of recommendations at the bottom of the page. Sale or other performance indicators are measured based on how the customer reacts to those recommendations, such as carting or purchasing a recommended product.

However, recommendations often have an impact beyond the same session. Following are examples of how sales can be impacted by Digital Recommendations:

- A recommendation is viewed, placed into the cart, and the purchase is made in a subsequent session
- A recommendation is viewed, carted, but the purchase is intentionally deferred to a later day
- A recommendation is viewed without carting. However, later, the product is selected from a recently viewed list and then purchased

The preceding examples show how sales can be indirectly attributed to Digital Recommendations.

The following metrics are new for the Indirect attribution report. For more information about these metrics, see "Glossary of Reporting Metrics for Product Recommendations" on page 100:

- Item Sales Total
- Item Sales Same-Session
- Item Sales Cross-Session
- Items Sold Total
- Items Sold Same-Session
- Items Sold Cross-Session

Selecting the attribution period

You can select the number of days for the attribution period.

Procedure

1. Click **Reports** in the side navigation.
2. Select **Indirect Attribution Report**.
3. Click the **Attribution Dropdown** and select the number of days (1 - 7) for the attribution period. The default value is 7 days.

Allocating attribution percentage

You can allocate different percentages of sales that are attributed to Acoustic Digital Recommendations for each of the last seven days with Indirect Attribution report configuration.

About this task

Note: Report Configuration pages are only available for client administrators.

By allocating attribution percentage, you adjust how much of a sale is indirectly attributed to a recommendation generated by Digital Recommendations. If the sale happens on the same day the recommendation is viewed, you can assume that the recommendation directly results in a sale. So, the allocation is set to 100% for the same day. However, if the sale is the day after the recommendation was viewed, another factor might be a contributor to the sale. Therefore, you can allocate a lower percentage of the sale, such as 70%, on day 2. You can adjust the allocation for each day.

Procedure

1. Click **Manage** in the side navigation.
2. Click **Report Configuration** in the side navigation.
3. Click **Indirect Attribution** in the side navigation.
4. Enter the percentage of sales you want to be attributed for each day (1 - 7) by Acoustic Digital Recommendations. The current day always attributes 100% of sales.

Table 30. Example of attribution allocation	
Day	**Percentage**
Today	100%
Day 1	80%
Day 2	20%
Day 3	10%

5. You can enable **Show additional indirect attribution information in the Zone Performance Report** to add this configured information to the Zone Performance Report and dashboards.

   - Configuring the attribution % does not apply to information displayed in the Product Zone Report
   - If the check box is selected, you can select the following metrics to display in dashboards:
     - Items Sold Same-Session
     - Items Sold Cross-Session
     - Items Sold Total
     - Item Sales Same-Session
     - Item Sales Cross-Session
     - Item Sales Total
   - If the check box is not selected, you can select only these two metrics to display in dashboards:
     - Item Sales
     - Items Sold

6. Click **Save**.

Select report options

You use the icons and lists that are located above a report to select more options.

For all reports, you can do the following actions:

- Change the appearance of graphed data by clicking the icons at upper left.
- Collapse or expand sections to show the controls above the data, a data graph, or a data grid by clicking the **-/+** or arrow icons at upper left of each section.
- Enter comments that you want to save by clicking **Comments**. For more information, see "Save reports" on page 99

You use the **Report** list at that is in the upper right to choose how you want to review performance data:

- **Report** shows data for a specific point in time.
- **Trend** shows changes over time.

More options are available based on these viewing options you select.

Options for report views

- To define the reporting period, click the calendar icon for the **Period A** field or **Report Options** that is in the upper right. For more information about time reports, see "Select comparison time periods" on page 100
- To select metrics to include on the report from a predefined list or to create a formula of your own, click **Report Options** then the **Metrics** tab.
- To reduce reported values to values that match characteristics that you define, click **Report Options** then the **Filters** tab.
- To specify the calculations to make for a report with two periods, click **Report Options** then the **Comparison Settings** tab.

Options for trend views

- To specify the time frame for the trend view, use the lists at upper right to specify the length of the period. For more options, click the calendar icon or **Report Options** at upper right.
- To include a second trend line that plots data for the same time period in the previous year for comparison, select the **Show Previous Year** check box at upper right. For a trend view that includes two trend lines, data for the previous year can be plotted so that the x-axis values match the same calendar date or the same day of the week in the current year. Select either **Align by Date** or **Align by Day**.
- To apply four-week average smoothing to the trend line, click **Report Options** that is in the upper right and check the **Smoothing** check box.
- To select the metric for the trend view, use the **Select Metric** list that is included in the upper left of the graph.

Save reports

You can save reports and optionally share them within Digital Recommendations, or print, download, and email reports for other uses.

To select any of these options for a report, click the icons that are included in the upper right.

If you choose to email a report, you have the following options:

- Send the report one time or on a recurring schedule that is based on the specified Period A time period.
- Specify the file type.
- Choose the time periods to include for reports that include a comparison time period (Period B):
  - For reports sent by email on a recurring schedule, specify either a relative period or a fixed period.
  - For reports sent by email, specify the fixed period.
  - Alternatively, include only the Period A time period in the report by clicking **Do not include B range**.
- Supply an identifying file name.
- Designate a list of recipients and a subject for the email message.

Select comparison time periods

You can review performance data for a single time period or compare two time periods.

To view a Digital Recommendations report, you define the initial, "Period A" time frame by indicating a specific or relative day, week, month, quarter, or year. Click the calendar icon for a comprehensive set of options.

To include a second, "Period B" time frame for comparison, check the **Period B** check box then select the time period.

Note: For a trend view, you do not specify Period A and Period B. Instead, you can plot a trend line for the same time period in the previous year.

Glossary of Reporting Metrics for Product Recommendations

Descriptions for all metrics use in Reports and Dashboards.

Note: For the A/B test reports, **Lift metrics** are calculated as (test split metric - control metric) / control metric.

Abandoned Sales
The total value of sales that are lost on items that are abandoned during the selected time period.

Average Abandoned Item Price (Abandoned Sales / Items Abandoned)
Average Price of all abandoned items during selected time period.

Average Item Price
The average price of all items sold (Items Sales / Items Sold).

Average Number of Items Ordered from Zone
Items sold/Buying sessions = Average number of items for buying sessions.

Average Value of Items Ordered from Zone
Item sales/Buying sessions = Average value of basket for buying sessions.

Buying Sessions
The number of sessions in which orders were placed.

Buying Sessions / Viewing Session
The percentage of viewing sessions where the product was purchased by a session during selected time period.

Element Views
The number of times an element is viewed. A count of the Element tag. Element data is collected by the Element tag.

Element Views / Sessions
The ratio of elements views to visitor sessions: Element Views that are divided by Sessions. Element data is collected by the Element tag.

Event Points
The total number of event points. Event data is collected by the Conversion Event tag. Action Type = 1 reflects an initiation. Action Type = 2 reflects a completion. Passing Event Point values is optional.

Event Points / Session
The average number of event points per session: Event Points that are divided by Sessions. Event data is collected by the Conversion Event tag. Action Type = 1 reflects an initiation. Action Type = 2 reflects a completion. Passing Event Point values is optional.

Events Completed
The number of conversion events completed. A count of the collected Conversion Event tags where type = 2. Event data is collected by the Conversion Event tag. Action Type = 1 reflects an initiation. Action Type = 2 reflects a completion. Passing Event Point values is optional.

Items Abandoned

The total number of items that are placed in a shopping cart but not purchased.

Item Abandonment Rate

The ratio of items that are abandoned to items placed in the shopping cart.

Item Sales

Total sales of items that are calculated with the shop tags.

Item Sales Cross-Session

The total item sales indirectly attributed for the selected day range (1 - 7 days).

Item Sales Same-Session

The total item sales in one session.

Item Sales Total

The total number of sales that are attributed to recommendations that are viewed within a previous session over a specified period.

Items Sold

The number of products (units) sold.

Items Sold Cross-Session

The number of items that are sold indirectly attributed for the selected day range (1 - 7 days).

Items Sold Same-Session

The total number of items that are sold in one session.

Items Sold Total

The total number of items sold that are attributed to recommendations are viewed within a previous session over a specified period.

Orders

The total number of orders placed.

Product Views

The total number of times a product detail page (or category that contains the page) was viewed. A count of the collected Product View tags.

Product Views / Session

The average number of product views per session.

Product Views / Items Sold

The average number of product views per items sold.

New Buyers

The number of unique visitors who made their first purchase during the specified time period. They can be new or repeat visitors.

Sales

Total sales of purchased items that are calculated with the order tags.

Sessions

The total number of sessions. A session is defined by a sequence of records that are collected by a common session cookie with no more than 30 minutes of inactivity between collected records.

Viewing Sessions

The number of sessions during a selected time period that included a product page view.

Zone Order/Session ratio

Buying sessions/Viewing sessions.

Performance dashboards

You can customize dashboards to see specific data. Dashboards provide a summary of the Digital Recommendations reports.

Product zone performance modules

With the assumption that Digital Recommendations is already implemented, your first step in the application is to look at performance dashboards. Dashboards provide reporting capabilities within the application. You can view a standard dashboard that shows the product site performance and product zone performance modules. The product site performance module shows what sales came as a result of the Digital Recommendations implementation. The product zone performance breaks down performance further by showing sales attributed to the various zones on your site that are displaying Digital Recommendations recommendations.

Content zone performance modules

With the assumption that Digital Recommendations is already implemented, your first step in the application is to look at performance dashboards. These dashboards provide reporting capabilities within the application. You can view a standard dashboard that shows the page site performance, content zone performance, and element reporting dashboards. The page site performance module shows page views that came as a result of the Digital Recommendations implementation. The content zone performance breaks down performance further by showing views attributed to the various zones on your site that are showing Digital Recommendations recommendations. The element reporting dashboard shows the number of views for each element.

Viewing a dashboard

You can view standard dashboards or dashboards that you created.

About this task

Digital Recommendations is initially configured with the product site performance and product zone performance dashboards in the Standard Dashboards category. If you created more dashboards, you can find them in a category other than Standard Dashboards.

Digital Recommendations is initially configured with the content zone performance and page site performance dashboards in the Standard Dashboards category. If you created more dashboards, you can find them in a category other than Standard Dashboards.

Procedure

1. On the side navigation pane, click **Dashboards**.
2. Click the dashboard category where the dashboard is located.
3. Click the dashboard to view.

The Standard Dashboard

You use the standard dashboard to monitor module performance.

Your Digital Recommendations implementation includes a standard dashboard that contains a product site performance and product zone performance module.

Your Digital Recommendations implementation includes a standard dashboard that contains a page site performance and content zone performance module.

Note: You cannot edit the standard dashboard. However, you can create custom dashboards.

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Creating a dashboard

You can create custom dashboards to capture information that standard dashboards do not.

Procedure

1. Click **Dashboards** on the side navigation pane.
2. To create a dashboard, click **Create New Dashboard**from the **Actions** menu.
3. Select an existing category to place the dashboard or create a category.
4. Add modules to the dashboard by clicking and dragging them to the **Configuration View**. You can add any combination of modules even multiple modules of the same type.
5. Save the dashboard.
6. Edit the dashboard modules.

The Product zone performance dashboard module

You can view the performance of a single metric for your product zones by using the Product Zone Performance dashboard module.

The Product Zone Performance dashboard module displays data for the product zones that are deployed on your site. Use these dashboards to display the performance of a single metric for a category during a specified time period. You can configure multiple modules to increase the value of a dashboard. You can also use the product zone performance module for product recommendations.

Editing a product zone performance dashboard module

You can edit a zone performance module by clicking the **Edit Dashboard** icon at the upper right corner of the module.

About this task

The following are the most common ways to edit the zone performance dashboard:

- Change the span of time that the dashboard covers by using the **Period** field.
- Change the element category that you are viewing.
- Change the category that the dashboard includes by using the **Zone Performance Tracking Filter**. The default for category for the product zone performance dashboard is specified in **Manage** > **Zone Performance Tracking** > **Product Zone Performance**.
- Add a module to the dashboard.

The A/B test dashboard module

You use the A/B test dashboard module to plots the performance of each group of an active A/B test in a bar chart

You can specify which A/B Test to track in the module and which KPI is used to assess the performance. The A/B Test Performance dashboard module type is disabled if your implementation is configured to use flat file recommendations only.

Editing the A/B Test Dashboard module

You can customize the A/B test dashboard.

About this task

You can edit the A/B Test module by clicking the Edit Dashboard icon at the upper right corner of the module.

The most common ways to edit the A/B Test module are:

• Change the A/B test you are tracking. You also can create a separate module for each AB test.
• Change the metric that you are viewing in the module.
• Add a module to the dashboard.

The KPI Spark Dashboard module

You can use the Key Performance Indicators (KPI) Spark Dashboard module to view trends of your KPIs.

All metrics that are available in the Zone Performance report are available in the KPI report. You can display five metrics at a time.

A spark (trend) line for each metric highlights the most recent metric value and the high and low values in the trend date range.

Editing the KPI Spark Dashboard module

You can edit the KPI spark module.

About this task

You can edit the KPI Spark module by clicking the **Edit Dashboard** icon at the upper right corner of the module.

The most common ways to edit the KPI spark module are:

• Change the metrics you are viewing in the module
• Specify the time span of data that you are viewing
• Change the category that the dashboard includes using the **Zone Performance Tracking Filter**. The default for category is specified in **Manage** > **Zone Performance Tracking** > **Product Zone Performance**.
• Add a module to the dashboard.

The Product Site Performance Dashboard module

You can use the Product Site Performance Dashboard module to view the overall performance of recommendations over the specified number of days.

The Product Site Performance dashboard shows the total site sales and the site sales attributed to recommendations generated by Digital Recommendations sales and views. The following metrics are presented in the module:

• Total Sales - Cumulative site-wide sales.
• Digital Recommendations Sales - Cumulative sales total for all products in the parent category that is selected on the **Manage** > **Zone Performance Tracking** > **Product Zone Performance Tracking** page.
• % of Total Sales - Digital Recommendations Sales / Total Sales.

Editing a product site performance dashboard module

Customize the site performance module.

About this task

You can edit a Site Performance module by clicking the **Edit Dashboard** icon at the upper right corner of the module.

The most common ways to edit the site performance dashboard are:

- Change the span of time that the dashboard covers using **Period**.
- Change the category that the dashboard includes using the **Zone Performance Tracking Filter**. The default for category for the product site performance dashboard is specified in **Manage** > **Zone Performance Tracking** > **Product Zone Performance**.
- Add a module to the dashboard.

Sharing a dashboard

You can share a custom dashboard with others on your team, or change one of your custom dashboards so only you can view it.

About this task

By default, custom dashboards are only available to the user that created them. You can modify a dashboard to be available only to a user group or globally to all users. If you shared a custom dashboard with others, you can change it back so it is available only to you.

Procedure

1. On the side navigation, select the dashboard to share.
2. Select **Share Dashboard** from the **Actions** menu.
3. Select one of these options:

   - **Keep private to dashboard owner**: Keeps the dashboard private to the user that created it.
   - **Share globally with all users**: Makes the dashboard available to all users of the system.
   - **Share only with users from the following groups**: Makes the dashboard available to all user groups you select from the list.

     Note: User groups are managed by using the Admin function.

Emailing a dashboard

You can share a dashboard through email.

About this task

Follow these steps to email the data that is associated with a dashboard to any email address.

Procedure

1. Go to the dashboard that you want to share through email.
2. Click the envelope icon at the upper right of the dashboard.
3. Specify whether to send the email one time, or to send it on a daily, weekly, or monthly schedule.
4. Click **Save**.

Glossary of Reporting Metrics for Product Recommendations

Descriptions for all metrics use in Reports and Dashboards.

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Average Number of Items Ordered from Zone
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Buying Sessions
The number of sessions in which orders were placed.

Buying Sessions / Viewing Session
The percentage of viewing sessions where the product was purchased by a session during selected time period.

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Items Sold

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Items Sold Same-Session

The total number of items that are sold in one session.

Items Sold Total

The total number of items sold that are attributed to recommendations are viewed within a previous session over a specified period.

Orders

The total number of orders placed.

Product Views

The total number of times a product detail page (or category that contains the page) was viewed. A count of the collected Product View tags.

Product Views / Session

The average number of product views per session.

Product Views / Items Sold

The average number of product views per items sold.

New Buyers

The number of unique visitors who made their first purchase during the specified time period. They can be new or repeat visitors.

Sales

Total sales of purchased items that are calculated with the order tags.

Sessions

The total number of sessions. A session is defined by a sequence of records that are collected by a common session cookie with no more than 30 minutes of inactivity between collected records.

Viewing Sessions

The number of sessions during a selected time period that included a product page view.

Zone Order/Session ratio

Buying sessions/Viewing sessions.

Workbooks

You can create a workbook to group commonly used tabs together for easier access.

The following are examples of how to use workbooks:

- Group all components of a campaign together. With this workbook, you can quickly change a campaign configuration.
- Share reports and dashboards with others.
- Download your reports and dashboards in the same format each time you need them.
- Download data to a spreadsheet for presentation or distribution and share your common views with others.
- Create a set of dashboards for executive overviews.
- Create a set of frequently used reports.

A/B testing

Digital Recommendations includes an A/B testing capability that is designed to run A, B, C, and D split tests to determine the effect of various Digital Recommendations settings onsite performance.

You can use A/B testing to test alternative behavior algorithms, business rules, site zone locations (above or below the fold), and the number of recommendations that are delivered to a specific site zone.

You can use A/B testing to test business rules, site zone locations (above or below the fold), and the number of recommendations that are delivered to a specific site zone.

You can use A/B Testing only if you are using dynamic recommendations.

How A/B Testing Works

When a new visitor arrives to a website tracked by Digital Analytics, they are assigned a random A/B testing number between 0 through 99 regardless of whether they are in a test or not. This value is established in the Digital Recommendations personalization cookie and stays with the visitor until the cookie is deleted. A/B tests are associated with a site zone. When a visitor arrives at a site zone where an active A/B test is running, a single Digital Analytics element tag is sent to Digital Recommendations with the name of the test and name of the test group the visitor is in. To report on the results of an A/B test, Digital Recommendations creates report segments by using the appropriate element tag variables as criteria. You can use Top Line, Merchandising, and other Digital Analytics reports that support report segment filtering to determine the results for each test group.

Test Groups and Multiple Zone Tests

A Digital Recommendations A/B test is associated with a site zone. However, to achieve some testing scenarios, configure multiple A/B tests for simultaneous operation. In general, test only one hypothesis or scenario at one time. Testing multiple hypotheses one time makes it difficult to determine which change was responsible for a lift or drop in conversions.

When you use multiple Digital Recommendations A/B tests to test a single hypothesis, split the percentage for each test equally. For example, if you are running an A/B test on zone 1 and the test has a 50/50 split across a Control group and a Test A group. If you run a second A/B test on zone 2, make sure that the test has a 50/50 split across a Control group and a Test A group. All visitors who are assigned a test number are in the Control group for both tests. All visitors who are assigned a test number between 50 through 99 are in the Test A group for both tests.

Creating an A/B test

Use this procedure to create an A/B test.

Procedure

1. Click **A/B Tests** on the side navigation pane
2. Click **Action** > **Create New A/B Test**.
3. Type an appropriate name and description for the test you want to run.

   Note: Make sure that the name of your test is unique and does not conflict with any category IDs.
4. Specify the zone that the test applies.
5. Specify the start and end dates for the test.
6. Specify Control parameters for the test.
7. Specify Test A parameters.
8. If you are running more than one variation, click **Add request** to add Test B. You can click **Add request** again to add a Test C.

9. In the % column, split the test equally across tests.
For example, if you have a Control and Test A, set both to 50%. If you have a Control, Test A, and Test B, set each to 33%.

10. Activate the test.

Related concepts

"Measure A/B test results" on page 112
You have different ways to measure your A/B test results.

Related tasks

"Comparing recommendations" on page 110
You can compare the results of any offer that you create in Digital Recommendations against results that do not use Digital Recommendations.

"Comparing offers" on page 109
Another useful test is comparing results of two offers that are configured differently.

"Testing the zone header text" on page 110
You can test the effect of changes to the Zone Header Text.

"Testing the number of recommendations" on page 111
You can test if the number of recommendations improves results.

"Testing the zone placement" on page 111
Tests how visitors respond to recommendations that are placed in different zones.

"Deactivating an A/B test" on page 112
A/B tests that are configured to stop on a specified day runs through the specified end date. The test will stop early in the morning of the day after the specified end date when all Digital Recommendations processes are complete.

Comparing offers

Another useful test is comparing results of two offers that are configured differently.

About this task

In this scenario, make the offers the same, but change one parameter such as behavior algorithm. For example, have one offer set with a 7-day data analysis time period and another offer set with a 14-day data analysis time period.

In this scenario, make the offers the same, but change one parameter such as the data analysis time period. For example, have one offer set with a strong view-to-view behavior algorithm and another offer set with a strong buy-to-buy behavior algorithm.

You can also create all offer parameters the same, but use a different set of rules. For example, you can set one offer with a rule to exclude items that are not in the same category and one offer with a rule to de-emphasize items that are not in the same category.

Procedure

1. Create two offers: one, the **Control** and the other **Test A**. Configure the offers the same, changing only one parameter or rule.

2. Create a recommendation plan for each offer. Use the same target in both recommendation plans. Select the control offer in one recommendation plan and the Test A offer in the other recommendation plan.

3. Create an A/B test.

   a) Specify the zone that you created.

   b) For the **Control** test element, select the recommendation plan that is associated with the Control offer.

   c) For the **Test A** test element, select the recommendation plan that is associated with the Test A offer.

4. View the test results in the A/B test report or in an A/B performance dashboard. Results complete when the end date you specified for the test is past.

Comparing recommendations

You can compare the results of any offer that you create in Digital Recommendations against results that do not use Digital Recommendations.

Procedure

1. If the Control offer for the test does not exist, create an offer.
2. Create a recommendation plan that uses the offer that you created.
3. Create a zone that uses the recommendation plan that you created.
4. Create an A/B test.
5. Specify the zone that was created in the **Zone** field.
6. For the **Control** test element, specify the recommendation plan that you created.
7. For the **Test A** test element, select **No Recommendations** as the Recommendation plan.
8. Specify 50% each for Control and Test A.
9. Specify the same number of recommendations for Control and Test A.
10. View the test results in the A/B test report or in an A/B performance dashboard. Results are complete when the end date you specified for the test is past.

Testing the zone header text

You can test the effect of changes to the Zone Header Text.

About this task

For example, test "Other customers also shopped:" versus "Other customers also viewed:"

For example, test "Your recently viewed pages:" versus "Pages that you viewed:"

Procedure

1. Create two identical recommendation plans.
2. Change the header text in the first recommendation plan to the first header text that you want to test.
3. Change the header text in the second recommendation plan to the second header text that you want to test.
4. Create an A/B test. Make sure that you specify the first recommendation plan as the Control and the second recommendation plan as Test A.
5. View the test results in the A/B test report or in an A/B performance dashboard. Results are complete when the end date you specified for the test is past.

Testing the number of recommendations

You can test if the number of recommendations improves results.

About this task

Test whether showing four recommendations is better than showing six recommendations.

Procedure

1. Open the zone.

   Note: The number of recommendations that are delivered to the client zone population function is a standard setting in the A/B Test Settings.

2. Configure the number of recommendations for the control and the test groups.

3. View the test results in the A/B test report or in an A/B performance dashboard. Results are complete when the end date you specified for the test is past.

Testing the zone placement

Tests how visitors respond to recommendations that are placed in different zones.

About this task

You create two zones. 50% of the time recommendations are displayed in a single zone and 50% of the time recommendations are displayed in the other zone. Visitors see the same zone placement during the length of the test. For example, test if the horizontal zone is more effective than the zone at the bottom of the page.

Procedure

1. This test assumes that both zones are coded into the site's pages and are tested to be fully functional with the ability to render Digital Recommendations dynamic recommendations.

2. This test requires the creation of two A/B tests. Create A/B Test 1 according to the following steps. You must assign No Recommendations to the opposite test group in Test 1 versus Test 2. The percentage splits must be the same for the control and test groups across both tests. This split ensures that any visitor who falls into the Control of Test 1 also fall into the Control of Test 2. Likewise, any visitor who falls into Test A group of Test 1 also fall into Test A group of Test 2.

   a) Create the first test around zone 1 where the Control Group sees the default set of recommendations 50% of the time.

   b) Configure Test A to see No Recommendations the other 50% of the time. The "No Recommendations" option is available in the Recommendation Plan list in the A/B Test Settings. When "No Recommendations" is selected, Digital Recommendations delivers "_NR_" to the site's zone population function. This response causes the site zone not to display.

3. Create A/B Test 2 as follows:

   a) Create a second A/B test around zone 2 where the Control shows No Recommendations 50% of the time.

   b) Configure Test A to use the recommendation plan that is used on the Control Group of Test 1.

Deactivating an A/B test

A/B tests that are configured to stop on a specified day runs through the specified end date. The test will stop early in the morning of the day after the specified end date when all Digital Recommendations processes are complete.

About this task

If a test is not going well, it might be necessary to stop a test immediately.

Procedure

1. Change the **End Date** of the test to a date in the past.
2. Select **Manage > Recommendations Blacklist** from the navigation menu.
3. Click **Publish Configuration Changes**.

Results
The A/B test stops running in approximately 1 hour from the time that you publish the configuration changes.

Measure A/B test results

You have different ways to measure your A/B test results.

Element Report
View top-level metrics that correspond to visitors who fell into established test groups.

Report Segments
Create a report segment for each test group. To do so, use the appropriate Element Category (test name) and Elements Viewed (test group ID) as the criteria for the segment. Set the report segment to filter the Top Line Summary and the Category report.

Filtering the Product Category and Top Line reports
When the report segments are established, use the **Open Settings** button in the Product Category and Top Line Summary reports to compare the performance of the test groups in these reports.

Filtering the Category and Top Line reports
When the report segments are established, use the **Open Settings** button in the Category and Top Line Summary reports to compare the performance of the test groups in these reports.

Image recommendations

You use image recommendations to provide a recommendation list as HTML images that include attribute values like price and product name.

Each image in the list also provides a link to the product page on your website for that recommended item. An image recommendation uses the dynamic delivery method to provide a recommendation list in a different output format: as HTML images that include attribute values like price and product name. Each image in the list also provides a link to the product page on your website for that recommended item.

The primary use for image recommendations is with email campaigns. This type of recommendation generates the list of recommended items when the email recipient opens the message, based on a targeted item in the email message.

Image recommendations are currently only available for product recommendations.

How image recommendations work

Understand how image recommendations are delivered.

As with most campaigns, you start with the offer. For image recommendations meant for email campaigns, you create offers meant to be used in messages to users. Messages can be about abandoned shopping carts, order confirmation, and order tracking. When you create the image recommendation template, you configure the primary offer (and fallback offer, if necessary). Then, you specify what to do with multiple targets, add any campaign tracking parameters that you need, and configure the HTML style and size information for the images.

Then, you preview and proofread the results. The Preview tab of the image recommendation provides generated HTML. For each recommendation, an `img` tag is wrapped in an HREF tag that includes a variable for the target, typically something like %SKU%. When you are satisfied with the way it looks, you publish the template to the Content Delivery Network.

In the meantime, you or your email designers work with your email service provider to make the following configurations:

- Select the HTML code that is generated for the template from the Preview tab of the image recommendation template and position it in the correct locations in the email template.
- Configure the appropriate processing that resolves the values of the target variable when emails are generated from the email template that includes the HTML.

When someone opens the resulting email and the email client loads the message, the HTML from the image recommendation template sends an HTTP request to the Client Delivery Network (CDN). The CDN responds with the recommended items.

In other words, the HTML copied from the recommendation template acts in a similar way as a dynamic site zone on your web page. In this case, you do not use the recommendation request function or a zone population function. The HTML handles the request and the recommendation processing on the CDN handles the formatting of the results.

If there are no recommendations for the target product, the CDN sends a one-pixel transparent image. As a result, email recipients do not see the red X that indicates a missing image. Instead, the area where the image normally appears is blank.

Image recommendations work with HTML email messages only. You cannot use image recommendations with text-only email messages.

Add the required data to the data uploads

You can add product attributes for image recommendations.

To use the image recommendation feature, your Enterprise Product Content Mapping File must include the following product attributes:

- An attribute that holds the URL of the product thumbnail images
- An attribute that holds the URL of the product page (on your website)

Work with your database administrator and your Digital Analytics client consultant to modify your data load files so they include this information.

Determine the design requirements

You must design images to fit the area and position where they are delivered.

At run time, the result of an image recommendation is a number of composite images. Each image contains the thumbnail of the product that is recommended and includes the attribute data that is

specified in the template. When you create the template, you configure design attributes so that the final images of the recommended items fit into the design of the email messages that display them.

Before you begin, you must determine the following specifications:

- What are the dimensions of the thumbnail images? How do you want them styled? For example, what is the horizontal and vertical position to use, and what do you want the border color and width to be?

- How do you want to style the text for the attribute values? That is, the font name and size, alignment (left, center, or right), horizontal and vertical position.

- How do you want to style the full image that includes the thumbnail and the attributes? That is, the horizontal and vertical position, size of the full area, background color, border color, and width.

- Do you want to include a secondary image, such as star rating, as part of the image recommendation?

Create or identify the offers

Before you create an image recommendation template, you must determine the offers to use.

- The delivery method must be set to Site Zone.

- The primary offer must be a product cross-sell offer, site category offer, EPR category offer, or an attribute offer. You cannot use search-based offers.

- The fallback offer must be a category offer.

As with any offer, the one to use depends on what you plan to target. For example, if you plan to use the image recommendation in an order confirmation email, you are likely to use some variation of the preset cart page affinity settings so that items that "go with" the targeted item are included in the recommendations. For an email about an abandoned shopping cart, you are likely to use some variation of the product page affinity settings, which weights the view-to-view method higher than the others.

Note: While business rules can be applied as usual to the recommendation list-brand rules or inventory rules, for example - you cannot use personalization or filter items from the recommendation list-based onsite visitor behavior because the offer is not used in a site zone.

In addition, the lists for the offer fields in the image recommendation form include active offers only. So if the offers you want to use are not active, activate them before you create the image recommendation template.

Configure image recommendations

You configure image recommendations.

- Whether your site uses tracking parameters for marketing reports (Acoustic Digital Analytics) or for your email service provider, consider the following suggestions to configure your image recommendations:

- The URL root of your product images. For example: `http://MyCompany.com/creatives/images/products/`

- If there is no target or none of the targets have any recommendations, create a fallback offer. Determine which offer is the fallback offer and determine the product ID to use as the fallback target.

- You can have Acoustic Digital Analytics determine which product attribute to evaluate if there are multiple targets. It chooses the product with the highest value. So, use an attribute with a numeric value like price or rank or profit margin.

Configuring image URLs for recommendations

You can configure image URLs to determine how product images are loaded.

About this task

The Digital Recommendations administrator for your company must complete the following configuration steps.

Note: `Configuring product image URLs is optional.`

Procedure

1. In the left navigation pane, select **Manage > Offer Configuration**.
2. On the **Attributes** tab, in the **Product Attribute Definition** table, scroll to the attribute that represents the URL of the image thumbnails.
3. In the **Attribute Prefix** field for this URL, enter the URL root of your product images.
   For example: `http://MyCompany.com/creatives/images/products/`
4. Under **Special Values**, specify which attribute contains the URL of the image thumbnail.
5. Under **Special Values**, specify which attribute contains the URL of the product page.
6. In the **Attributes** to include in **Offer Response**, move the attributes that contain the URL of the image and product page to **Selected**.
7. Click **Save**.

Creating the image recommendation templates

Complete the following steps to configure the offer, number of recommendations, and what to do with multiple targets when email recommendations are generated.

Procedure

1. Select **Image Recommendations > Create New Image Recommendation**.
2. In the **Template Name** field, enter an appropriate, short descriptive name with alphanumeric characters and no spaces.
3. In the **E-mail Service Provider** field, select the appropriate option from the list.
4. In the **Primary Offer** field, select the main offer. The list includes all currently active product cross-sell, site category, EPR category offers, and attribute offers that target site zones.
5. `Optional.` Select a fallback offer and specify the ID of the fallback target. The list in the **Fallback Offer** field includes all currently active product cross-sell and category offers (that target site zones).
6. For the **Number of Recommendations**, choose a number that fits into the design of the email messages with which you plan to use this image recommendation.
7. In the **Recommendations for multiple targets** section, specify how you want the target to be selected if the email message has multiple targets. If you decide that recommendations generate for just one target, select the attribute that determines which target to choose.
   For example, the price or (profit) margin attribute. The product with the greatest value for that attribute becomes the target.
8. Use the settings on the right side of the **Setup** tab to configure any tracking parameters that are necessary for your website and campaign tracking and analytics. At run time, when the list of

recommended items is generated, the query strings that are appended to the URLs for the product pages includes name-value pairs for the parameters that are listed here.

- Note: the cm_vc parameter is included and set to the name of the template by default. (For more information, see "Configure the template names as virtual categories in the Category Definition File" on page 118.

- If you are using the Marketing Programs By Vendor report, then select the **Add MMC parameters to URL** option and configure the parameters.

- If you are passing tracking values to the ESP, then enter the name-value pairs for the parameters. These name-value pairs are appended to the query string after the "?" character in the URL.

The values that you specify are passed to the product page (your web page) when the email recipient clicks the thumbnail image of a recommended item.

9. Click **Save** to continue working or if your template is complete, click **Save and Close**.
10. Continue to "Configuring the images generated by the template" on page 116.

Configuring the images generated by the template

The images for each recommended item include the thumbnail of the product that is recommended and any attribute/value pairs that are specified.

About this task

To configure the size and other design attributes of the images that are generated by recommendation image template, complete the following steps.

Procedure

1. From the image recommendation template (**Image Recommendations > open**), click the **Attributes** tab.

2. In the **Full Image Specifications** area, enter the values, in pixels, for the full image. This image is the composite image that includes the thumbnail and the appropriate attribute/value pairs.

3. Specify the background and border colors, as hexadecimal color codes, for the entire image.

4. In the **Thumbnail Specifications** section, enter the values, in pixels, for the size and position attributes of an individual thumbnail. Also, specify the background and border colors, as hexadecimal color codes, for the thumbnail image.

5. In the **Optional Secondary Image Specification** section, specify the attribute alias that is associated with the secondary image and size and position of the image.

   For more information, see "Adding a secondary image to the image recommendation" on page 116.

6. In the **Text attributes used within recommendation image** section, complete the following steps:

   a) Click **Add Attribute**.

   b) Select the attribute from the list.

   c) Specify the horizontal and vertical position values, in pixels.

   d) Select the font type, color, and style.

   e) Enter the font size and select the alignment option.

   f) Repeat these steps for each attribute you want to include.

7. Click **Save** to continue working or if your changes are complete, click **Save and Close**.

Adding a secondary image to the image recommendation

You can add additional information in graphics form, such as star-ratings, to an existing product image.

Before you begin

This procedure requires an understanding of the EPCMF file. For more information, see The EPCMF in the Acoustic Product Recommendations Configuration Guide.

About this task

Procedure

1. Create a column in your EPCMF for the secondary image.
2. Define the secondary image for each product in your EPCMF.
3. In the Digital Recommendations interface, select **Manage** > **Product Offers** > **Attributes**.
4. In the **Product Attributes Definition** table, define the following values for the **Enterprise Product Static Attribute** associated with the secondary image attribute:

Option	Description
Alias	The alias of the secondary image, as defined in the EPCMF file. For example, `RatingStars`.
Data Type	Text
Default	A secondary image value that you want assigned for products that do not have a value that is defined in the EPCMF. If you do not want to use a default secondary image, leave this blank. For products with no secondary image defined, the product thumbnail and text attributes are displayed.

5. In the **Attributes to include in Offer Response**, move the `RatingStars` attribute to **Selected**.
6. Save the configuration.
7. Add the extra field attribute name of the secondary image to the **Optional Secondary Image Specifications** section of the Attributes tab
8. Add the height and width of the secondary image to the attributes pane.
9. Add the location that you want the secondary image to appear within the primary image.

Results

The secondary image displays inside the full image. If the secondary image is not available, the full image displays.

Previewing the images

You can preview and examine the formatting of your images before you publish the template.

About this task

You can specify which image to preview in various ways:

- Use the first recommendation for the default target as specified in the primary offer.
- Use the first recommendation for the default target from the fallback offer.
- Specify the product ID or category ID of a specific product image.

Complete the following steps.

Procedure

1. From the image recommendation template, click the **Preview** tab.
2. Select an option in the **Target to use for preview** section. If you select **Other product from primary offer**, enter the product ID or category ID. The **Fallback target** option is available if you configure a fallback on the **Setup** tab.

   The option that you choose is not saved. The next time that you examine the Preview tab, it defaults back to the default option.

3. Click **Update Preview**. The first time that you click **Update Preview**, it can take more than several seconds to get the results because Digital Recommendations publishes some temporary files to the Content Delivery Network.

4. Examine the results. Are you satisfied with the way it looks? If not, return to the **Attributes** tab, make your modifications, save your changes, and return to the **Preview** tab.

Results

When there are no recommendations to return, the CDN returns a single-pixel, transparent image to the email message. To help with troubleshooting, the CDN also returns one of the following error codes, which displays while you use image recommendation preview:

Error code	Description
4	There are no recommendations for the target.
7	There are no backup recommendations for the target.
100	The image file is malformed in some way and cannot be displayed.
101	The image file cannot be found.

Configure the template names as virtual categories in the Category Definition File

Provide information about the image recommendation templates (zones) in the Product Categories report.

By default, the system adds the `cm_vc` parameter and sets the value to the image recommendation template name when it generates the URLs for the product pages of the recommended items at run time. The Product Categories report uses the information from the `cm_vc` parameter to determine which recommendation zone - which in this case is the image recommendation template - offered the recommendation.

To provide information about the image recommendation templates (zones) in the Product Categories report, you or your DBA must add the names of the templates as virtual categories in the Category Definition File. The new categories are added as subcategories of a general recommendations category.

For more information, see "Virtual categories" on page 13 in the Digital Analytics Digital Recommendations Configuration Guide.

Configure the email templates

The **Preview** tab of your image recommendation template also provides the generated HTML that your email designers use in your email templates.

For each recommended item, it generates an `<img>` tag that is wrapped in an `<href>` anchor tag. For example, if the template is configured to provide two recommended items, the generated HTML has two sets of "img" and "href" tags that look something like this example:

```
<a href="http://recs.coremetrics.com/iorequest/url?cm_cid=00000000&
cm_template=OrderConf&cm_target=%SKU%&cm_rank=1">
<imgsrc="http://recs.coremetrics.com/iorequest/image?cm_cid=00000000&
cm_template=OrderConf&cm_target=%SKU%&cm_rank=1"/></a>

<ahref="http://recs.coremetrics.com/iorequest/url?cm_cid=00000000&
cm_template=OrderConf&cm_target=%SKU%&cm_rank=2">
<imgsrc="http://recs.coremetrics.com/iorequest/image?cm_cid=00000000&
cm_template=OrderConf&cm_target=%SKU%&cm_rank=2"/></a>
```

Copy the generated HTML code into a text file of some sort and give it to your email designers so they can determine the appropriate placement for each recommended product image. They can use custom CSS styling to specify the placement.

Configure the email processing that resolves the target variable

You can configure the appropriate processing that resolves the values of the target variable as name-value pairs for the target attribute in the URLs for the emails that are generated from the email template. Follow the instructions from your email service provider.

Typically, a mail merge or dynamic token feature runs email processing and is similar to these examples:

```
target=sku85039382
```

For multiple targets, be sure to use the vertical bar character (|) to separate each value. For example:

```
target=sku1|sku5|sku9
```

Publishing the image recommendation template

Before the email messages can obtain recommendations from the Content Delivery Network, you must publish the image recommendation template.

Procedure

1. From the **Image Recommendation** list, locate the template that you want to publish.
2. In the **Action** column, click **Publish** for your template. Digital Recommendations publishes the information from the template that determines how to construct the image recommendation images.

Test the email messages and run the campaign

After the image recommendation is published and the offers used by the image recommendation template are processed, send yourself a test message.

Open and examine the message. Make any necessary adjustments and send it again.

If your email service provider provides deliverability testing, it is also a good idea to run a deliverability test on the message. That way that you can ensure that adding recommendations to the email does not affect the deliverability of the message.

When you are satisfied with the email message, run your campaign.

Additional contact information

For recommendations for product improvements, contact IBM at: cm_feedback@us.ibm.com

If you need product assistance, contact the IBM Client Support Center: https://support.ibmcloud.com

You can also contact the IBM office for your region.

USA	
IBM 1001 E Hillsdale Boulevard Foster City, CA 94402 Toll Free: 1.866.493.2673	IBM Austin 11501 Burnet Road Building 905, Floor 2 Austin, TX 78758-3400 Toll Free: 1.866.493.2673
IBM Dallas 750 W John Carpenter Freeway Irving, TX 75039 Toll Free: 1.866.493.2673	

Europe	
IBM United Kingdom Limited 3 Furzeground Way Stockley Park Uxbridge Middlesex UB11 1EZ U.K. Tel: 020 8867 8003	IBM GmbH Beim Strohhause 17 D-20097 Hamburg Germany Tel: 0800-180-2597
IBM France 17 Avenue de l'Europe 92275 Bois Colombes Cedex France Tel: 0800 91 4912	
Asia Pacific	
IBM Hong Kong Limited Silvercord Tower 2 Room 907 30, Canton Road Tsim Sha Tsui Kowloon Hong Kong SAR, China Tel: +852 8201 0823 Fax: +852 8201 0832	IBM Australia and New Zealand 60 Southgate Ave Southgate VIC 3006 AUSTRALIA (Aus) 1800 69 CORE (NZ) 0800 69 CORE

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• Title of this document

• Page number or topic related to your comment

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Support

Support Center

The Support site can be found by clicking the Support link in the application menu bar.

The Support Center Site contains the following:

- **A searchable knowledge base** to answer questions and provide instant access to essential documents such as implementation guides, metrics glossaries, user guides, release notes, and more.
- **Educational tools** such as web-based trainings and archived webinars.
- **Marketing information** including case studies, white papers, and upcoming events such as the Client Summit.
- **Notifications** from Support.
- **Issue tracking** from the creation of a ticket through its resolution, which provides complete insight into the status of your inquiries.
- **Feedback** so that you can offer suggestions for improving the support site. (Send feedback about the applications to https://watsonmarketing.ideas.aha.io/ideas/new).
- **Chat** so that you can reach one of our Best Practices representatives right away.

Glossary

A

A/B testing

A tool that runs A, B, C, and D split tests so you can determine the effect of various Digital Recommendations settings on site revenues and conversions. You can use A/B testing to test alternative algorithm affinity weights, business rules, site zone locations (above or below the fold), and the number of recommendations that are delivered to a specific site zone.

A tool that runs A, B, C, and D split tests so you can determine the effect of various Digital Recommendations settings on site revenues and conversions. You can use A/B testing to test business rules, site zone locations (above or below the fold), and the number of recommendations that are delivered to a specific site zone.

Affinity score

A score that encapsulates the relative probability of a recommended item that has a specific affinity with a target item. Digital Recommendations calculates four separate affinity scores and then uses them to calculate a final Affinity Index for every recommended item.

Affinity Weights

Affinity weights control the weighting of four key data points in the Product Cross Sell algorithm. This capability allows you to tune the algorithm to address a range of customer behavior patterns and product mixes and to alter the output to address different styles of recommendations. For example, weighting recommendations toward items that customers view together generally delivers recommendations of similar items. Weighting recommendations based on items that are purchased together deliver recommendations of products across categories. Affinity weights provide controls to address a range of considerations. Changing the weights of each affinity type can dramatically alter the recommendations that are generated for each product.

Attributes

Attributes are individual pieces of product information such as price, brand name, or margin. Attributes are evaluated by business rules when Digital Recommendations calculates offers. When you are using dynamic recommendations, attribute/value pairs can be included in the response dataDigital Recommendations sends to the website to aid in with your display of the recommended items.

Attributes are individual pieces of product information such as rating, publisher, or article length. Attributes are evaluated by business rules when Digital Recommendations calculates offers. When you are using dynamic recommendations, attribute/value pairs can be included in the response dataDigital Recommendations sends to the website to aid in with your display of the recommended items.

B

Business Rules

You use business rules to place further limits on recommendation output. Exclusionary rules eliminate products, promotional rules force products into recommendations, and de-emphasis rules move products to the back of the candidate list of recommendations rather than excluding them. Rules can be configured globally (at the category level) or by product attribute. The data that rules evaluate is the business data you upload to the system in import files. Business Rules are always defined to apply to a set of Target products.

You use business rules to place further limits on recommendation output. Exclusionary rules eliminate items and de-emphasis rules move items to the back of the candidate list of recommendations rather than excluding them. Rules can be configured globally (at the category level) or by item attribute. The data that rules evaluate is the business data you upload to the Acoustic Digital Analytics system in import files. Business Rules are always defined to apply to a set of Target items.

Business Rules Data

The product attribute data and category data that you upload into Digital Analytics using the Enterprise Product Report files (EPCMF and ECDF). This data enables exclusionary rules processing to allow for category, price, margin, and other product attribute driven business rules.

The item attribute data and category data. This data enables exclusionary rules processing to allow for category, rating, publisher, and other attribute driven business rules.

C

Category Recommendations

Recommendations based on the site's top selling items that are ranked by unit sales or dollar sales. These top sellers are grouped by categories that are defined in the Enterprise Category Definition File) file. These recommendations can be presented at various points on your website. Configuration options enable you to modify the results of category top-sellers. For example, visitors find the top selling items no matter where they are placed on the website so you might want to remove the top 5%, 10%, or 20% of the top selling items from the recommendations. This allows additional products to be featured, which customers might not otherwise find on their own. Overall Site Top Sellers can also be configured for use on the home page, no search results page, or empty cart page.

Recommendations based on the site's top viewed items that are ranked by the number of views. These top viewed items are grouped by category. These recommendations can be presented at various points on your website. Configuration options enable you to modify the results of category top viewed items. For example, visitors find the top viewed items no matter where they are placed on the website so you might want to remove the top 5%, 10%, or 20% of the top viewed items from the recommendations. This allows additional items to be featured, which customers might not otherwise find on their own. Overall Site Top Views can also be configured for use on the home page or no search results page.

CDN (Content Delivery Network)

The mechanism for delivering Dynamic Recommendations to the website. This service is the dynamic delivery method of Digital Recommendations.

CDF (Category Definition File)

A file that defines the category hierarchy structure in place on your website category with the addition of virtual categories to track items that are sold through on-site search, product recommendations, and other non-navigational methods of finding and purchasing products.

cmDisplayRecs

The JavaScript function that must immediately follow the list of *cmRecRequest* calls on a page. When this call is received, the Digital Recommendations service processes the personalization algorithm,

eliminates duplicate products, and passes the final sets of recommendations to the client's zone population functions on the page.

The JavaScript function that must immediately follow the list of *cmPageRecRequest* or *cmElementRecRequest* calls on a page. When this call is received, the Digital Recommendations service processes the personalization algorithm, eliminates duplicate items, and passes the final sets of recommendations to the client's zone population functions on the page.

cmElementRecRequest
The JavaScript function that requests element content recommendations. The parameters of *cmElementRecRequest* are a Zone ID, a Target Element ID, a Target Category ID, and a Randomize Function.

cmPageRecRequest
The JavaScript function that requests page content recommendations. The parameters of *cmPageRecRequest* are a Zone ID, a Target Page ID, a Target Category ID, and a Randomize Function.

cmRecRequest
The JavaScript function that requests product recommendations. The parameters of *cmRecRequest* are a Zone ID, a Target Product ID, a Target Category ID, a Randomize Function, and a Search Term.

cmSetSegment
The JavaScript function that identifies the segment or group that a visitor is associated with.

Content Recommendation
Content recommendations allow you to recommend information to your visitors, rather than products. For example, if your website includes informational web page content such as articles, recipes, or instructions, you can recommend other articles, recipes instructions. If your website contains elements that are not within the content of your web page, such as videos or PDF files, you can generate content recommendations for other elements.

Cross-sell
To recommend related or similar products to a customer who is considering a purchase.

D

Data Analysis time period
The number of previous days for which data is processed when generating recommendations.

Digital Recommendations Personalization Cookie
This cookie is used to maintain ordered lists of the most recently viewed, carted, and purchased items and the most recently viewed categories. Associated category counts are maintained for the viewed products to help you to understand a visitor's category preference. This cookie is updated in real time using a hook into the Acoustic Digital Analyticslibraries.

This cookie is used to maintain an ordered list of the most recently viewed pages. This cookie is updated in real time using a hook into the Acoustic Digital Analytics libraries.

Dynamic Recommendations
One of the two recommendation delivery mechanisms, this method delivers dynamic (variable) recommendations based on pre-defined logic (like top sellers or price constraints) directly to your web pages. See also flat file recommendations.

One of the two recommendation delivery mechanisms, this method delivers dynamic (variable) recommendations based on pre-defined logic (like top view or rating constraints) directly to your web pages. See also flat file recommendations.

E

Element Tag (`cmCreateElementTag`)
The Element tag is used to track intra-page content. It also the function that passes extra fields to use for element content offers in Digital Recommendations.

`eluminate.js`
The Digital Recommendations library file, which handles creation and management of the Digital Recommendations Personalization Cookie and the execution of the *cmRecRequest* and *cmDisplayRecs*

functions. This file is provided only to those clients that are using locally hosted Digital Analytics libraries. This file is not provided to clients that are using Digital Analytics hosted libraries.

The Digital Recommendations library file, which handles creation and management of the Digital Recommendations Personalization Cookie and the execution of the *cmPageRecRequest, cmElementRecRequest*and *cmDisplayRecs* functions. This file is provided only to those clients that are using locally hosted Digital Analytics libraries. This file is not provided to clients that are using Digital Analytics hosted libraries.

EPR (Enterprise Product Report)

A report that also includes an import process for importing product and category data into Digital Recommendations and other Digital Analytics applications. This function is included with Digital Recommendations. The following two files are associated with the Enterprise Product Report:

- ECDF (Enterprise Category Definition File). A file used to import information that Digital Recommendations uses to process recommendations. It defines a category structure where items can reside in only one parent category. It must contain all of the categories that are included in the EPCMF file and all parent categories.
- EPCMF (Enterprise Product Content Mapping File). A file that defines each product, the category it belongs in (which must also be in the Enterprise Category Definition File), and up to 50 attributes about each product.

F

Fallback Recommendations

Fallback recommendations are used when there is limited behavior data history for a product, when strict business rules eliminate the requested number of final recommendations, or when recommendations are not available for the specified target to the *cmRecRequest*. There are two fallback processes. The first fallback process happens when the **Wisdom-of-the-Crowd** behavioral data is processed. When there is not enough site behavior data to complete the number of requested recommendations or if business rules eliminate recommendations, then top selling items from the Target Product's EPR category are used as default recommendations. A secondary fallback process is started when recommendations are not available when Dynamic Recommendation Requests are made from the client's website. The sequence of steps in the recommendation plan is used to customize this fallback process for each request.

Fallback recommendations are used when there is limited behavior data history for an item, when strict business rules eliminate the requested number of final recommendations, or when recommendations are not available for the specified target to the *cmPageRecRequest* or *cmElementRecRequest*. There are two fallback processes. The first fallback process happens when the **Wisdom-of-the-Crowd** behavioral data is processed. When there is not enough site behavior data to complete the number of requested recommendations or if business rules eliminate recommendations, then top viewed items from the Target Item's category are used as default recommendations. A secondary fallback process is started when recommendations are not available when Dynamic Recommendation Requests are made from the client's website. The sequence of steps in the recommendation plan is used to customize this fallback process for each request.

Flat file Recommendations Delivery

One of the two recommendation delivery mechanisms, this method delivers a fixed list of recommendations in a flat file which means the recommendations can be integrated with offline channels or custom applications such as call centers, paper catalogs, and in-store kiosks. See also, Dynamic Recommendations.

I

Image Recommendation

An image recommendation uses the dynamic delivery method to deliver recommendations as HTML images with attribute values like the product's name. Each image provides a link to the product page on your website for that recommended item.

The primary use for image recommendations is with email campaigns. This type of recommendation targets an item in the email message and then generates the list of recommended items when the email recipient opens the message.

Individual Visitor Personalization

No two visitors have the same interests nor do they demonstrate identical shopping patterns. Digital Recommendations builds rich individual visitor profiles based on historical and in-session data to automatically present each shopper with a unique set of recommendations. Even unknown visitors receive highly relevant recommendations based on the proven **Wisdom-of-the-Crowd** based algorithms of Digital Recommendations. Because visitor profiles are constructed in real time, recommendations can become personalized quickly, which allows Digital Recommendations to optimize recommendations for every visitor. In addition to automatically optimizing product page, cart recommendations, and category recommendations to the individual, specific recommendation zones can be defined to offer recommendations based on the visitor's observed behaviors. These behaviors include the following.

- Recommendations that are based on an item the visitor recently carted.

- Recommendations that are based on an item the visitor recently purchased.

- Top selling items from a category of the visitor's interest.

- Recommendations that are based on an item the visitor recently viewed.

No two visitors have the same interests nor do they demonstrate identical browsing patterns. Digital Recommendations builds rich individual visitor profiles based on historical and in-session data to automatically present each visitor with a unique set of recommendations. Even unknown visitors receive highly relevant recommendations based on the proven **Wisdom-of-the-Crowd** based algorithms of Digital Recommendations. Because visitor profiles are constructed in real time, recommendations can become personalized quickly, which allows Digital Recommendations to optimize recommendations for every visitor. Specific recommendation zones can be defined to offer recommendations based on the visitor's observed behaviors. These behaviors include the most recently viewed pages as recommendations.

Item

An item is a unique product in your catalog.

An item is a unique page or element in your catalog.

O

Offer

A collection of settings including offer type (Product, Category, Search), algorithm affinity weightings, data analysis time period, and business rules that generates a list of recommended items.

A collection of settings including offer type (Page Content, Element Content, or Category Recommendations), data analysis time period, and business rules that generates a list of recommended items.

Offer Setting

Offer settings define the frequency with which an offer is updated (monthly, weekly, or daily), the amount of data that is considered, the set of products for which recommendations are generated, the number of recommendations per product (flat file only), and the delivery method. Offers can be delivered using a flat file or can be generated dynamically using the Digital Recommendations Recommendation Service for integration directly to the website's presentation layer.

Offer settings define the frequency with which an offer is updated (monthly, weekly, or daily), the amount of data that is considered, and the set of items for which recommendations are generated. Offers are generated dynamically using the Digital Recommendations Recommendation Service for integration directly to the website's presentation layer.

Overall Top Seller Recommendations

These recommendations allow the merchandiser to specify the key categories of products to be represented for pages such as the home page, no search results page, or empty basket page. The top *n* selling items (*n* is a configurable number) are pulled from each of the key categories and represented to the visitor such that each category gets representation through the overall top seller

recommendations. As a result, the best selling, highest converting items from the key site categories are merchandised for unknown visitors. Optionally, the order in which the collection of overall top seller recommendations is presented can be randomly determined on page load by passing "R" as the fourth variable in the *cmRecRequest* function.

P

Page View Tag (`cmCreatePageViewTag`)
> The Page View tag is used to capture clickstream data as the visitor moves from page to page within the site. It also the function that passes extra fields to use for page content offers in Digital Recommendations.

Product Affinity Index
> The total affinity score that is used to rank the products that are recommended for each specific target product.

R

Recommendation Candidate
> A product that becomes a candidate for recommendation for the target product or category. It might be excluded later by a business rule, by personalization functions, or by its low score relative to other recommendations.

> An item that becomes a candidate for recommendation for the target item or category. It might be excluded later by a business rule, by personalization functions, or by its low score relative to other recommendations.

Recommendations Delivery
> Product Recommendations offers the flexibility to deliver a fixed list of recommendations using flat files or dynamic delivery. Flat file delivery enables you to post selected static recommendations. Dynamic delivery enables you to post rotating recommendations that are based on configurable parameters. Both methods of delivery generate sound recommendations and help drive additional sales.

> Content Recommendations offers the flexibility to deliver a fixed list of recommendations using dynamic delivery. Dynamic delivery enables you to post rotating recommendations that are based on configurable parameters.

Recommendation Plan
> The mechanism for assigning offers to site zones for dynamic recommendations. Additionally, you can configure fallback targets and fallback offers in case recommendations for an item are not available, and specify the header text to display on the banner of the zone.

Recommended Items
> The final items that are being recommended for any target item or category after the processing of business rules and personalization functions.

Rule Set
> A selection of target items and a corresponding set of rules. Rules in a rule set are applied only to the targets that are defined in the rule set. You configure rules and rule sets on the Rules tab of an offer.

Rule Targets
> The target items for which the business rules from an offer are applied. A rule can apply to all targets or for targets that are defined by category, attribute, or item ID. For example, a rule might apply to only items in a specific category.

S

Search Term Based Recommendations
> Search term-based recommendations allow merchandising teams to improve the following two business problems: Paid search landing pages are not always relevant, and websites and on-site search results that do not learn from visitor behavior.Digital Recommendations determines the best products to recommend for visitors who search using a query such as "Fishing Pole" or "Running Shoes". For every search term, a view of all sources of search traffic (Paid, Natural, and on-site) feeds

the Digital Recommendations algorithm. This aggregated view of customer interaction data across all search sources ensures the richest underlying data set for a single customer query. Search based recommendations can be rendered on Search Engine Marketing (SEM) or on-site search results pages and other locations such as the home page.

T

Target

The item or category for which recommendations are generated.

U

Up-sell

To recommend similar, higher priced products to a customer who is considering a purchase.

Z

Zone

An area on one or more web pages where recommendations are delivered.

Zone Population Function

The JavaScript function that your web designer codes to render the Digital Recommendations recommendations on the client's web page. Fourteen arguments are passed to the Zone Population Function to aid in the rendering. Your web designer must code the body of the function so that the recommendations can be displayed in a manner that is consistent with the design of your website.

Zone ID

An eight character ID, determined by your web team, that identifies an individual site zone. Zone ID is one of the variables that the `cmRecRequest` function passes when it requests a recommendation list.

An eight character ID, determined by your web team, that identifies an individual site zone. Zone ID is one of the variables that the `cmPageRecRequest` or `cmElementRecRequest`functions passes to requests a recommendation list.