



*Acoustic Digital Content
Recommendations documentation*

Contents

Acoustic Content Recommendations documentation.....	1
Acoustic Digital Content Recommendations Configuration Guide.....	2
Overview of the configuration guide.....	2
Use the latest eluminate.js file.....	2
Deploy dynamic recommendations.....	2
Recommendation request functions.....	3
Zone population function.....	6
Library and function call placement.....	15
Pass extra fields for page content with cmCreatePageViewTag.....	15
Pass extra fields for element content with cmCreateElementTag.....	15
Disabling Console Log Message.....	16
Enabling Console Log Message.....	16
Sample page source.....	16
Sample Acoustic-hosted libraries for content recommendations.....	16
Sample zone population function.....	18
Sample style sheet.....	21
Configure offer processing, attributes, and affinity weights.....	22
Configuring time-based weighting for session data.....	22
Publishing configuration changes.....	22
Configuring categories for the Zone Performance Report.....	23
Selecting the parent category for the content zone performance report.....	23
Select the categories to view in element reporting.....	23
ProductContent recommendations cookies.....	23
Cookie count management.....	24
Cookie size management.....	24
The REST API.....	25
Construct the HTTP request to send to the REST API.....	25
Display the list from the REST API.....	26
REST API error codes.....	28
Response times and performance.....	29
Administration.....	29
Project overview.....	31
Project preparation.....	37
Implementing dynamic recommendations.....	38
Glossary.....	39
Acoustic Digital Content Recommendations User's Guide.....	45
Acoustic Digital Recommendations Overview.....	45
Key Features of Content Recommendations.....	46
System requirements.....	48
Overview of the User's Guide.....	48
Access Legacy Digital Analytics products.....	48
User group permissions.....	49
Workflow for Configuring Content Recommendations.....	49
Content Offers.....	50
Creating a Content Offer.....	50
Deciding which rules interface to use.....	51
Ranking Content for Recommendation.....	51
Update frequency.....	51

Enable recommendation fallbacks.....	52
Determine the data analysis time period.....	52
Determine delivery options.....	52
Preview target list.....	52
Enable email notification.....	53
Activating an offer.....	53
Viewing the change history for a specific offer.....	53
Previewing the results of an offer.....	53
Track changes to configuration parameters.....	54
Tracking changes to offers and offer configurations.....	54
Preview recommendations.....	54
Previewing recommendations for a specific item.....	55
Previewing recommendations for a sample set of item.....	56
Previewing recommendations for new or modified offer.....	56
Previewing by using a grid.....	57
Previewing as images in a zone.....	57
Selecting attributes to display in previews.....	58
Apply business rules to content offers using the new rules interface.....	58
Defining individual rule groups.....	58
Defining shared rule groups.....	59
Converting an individual rule group to a shared rule group.....	59
Copying a shared rule group into an individual rule group.....	59
Creating a rule.....	59
Promotions.....	61
Emphasize items.....	65
De-emphasize items.....	66
When multiple de-emphasis rules apply to recommendations.....	69
The percentage value.....	69
The factor value.....	69
Exclude items.....	70
Blacklisting an item.....	72
Example business rules for content using the new rules interface.....	73
Viewing the effect of rules on the offer.....	73
Testing rule variations.....	75
Apply business rules to content offers using the legacy rules interface.....	75
Defining individual rule groups.....	76
Creating a Rule.....	77
Define Rule Targets.....	77
Define Rule Class and Rule Type.....	78
De-emphasizing items that match the selected attribute of a higher ranked recommendation.....	81
Blacklisting an item.....	81
Excluding specific pages from recommendation.....	82
Identifying element categories to include for recommendation.....	82
Example business rules for content.....	83
Viewing the effect of rules on the offer.....	83
Configure business rules policies for offers by using the legacy rules interface.....	83
Recommendation plans.....	89
Creating a single-step recommendation plan.....	89
Adding steps and personalization to your recommendation plan.....	90
Business cases for selecting targets.....	90
Configuring a step in your recommendation plan to use multiple targets.....	93
Fallback processing.....	96
Configuring Site Zones.....	96
Creating a zone that is visible only if the recommendation plan is valid.....	97
Personalizing content recommendations.....	98
System overview dashboard.....	98
Viewing a list of zones, offers, and recommendations plans.....	98
Identifying which zones are active or inactive.....	99

Identifying the number of recommendations.....	99
Identifying or compare the parameters of one or more A/B tests.....	99
Identifying inactive recommendation plans and zones.....	99
Identifying every instance that an offer is used.....	100
Identifying every instance that a recommendation plan is used.....	100
Identifying recommendation plans that are overridden by an A/B test.....	100
Test recommendations and rule output.....	100
Test recommendations.....	101
Troubleshoot results of business rules.....	101
Troubleshoot too few recommendations.....	102
Reports.....	102
Content Zone Performance Report.....	102
Element Reporting.....	103
A/B test performance report.....	103
Select report options.....	103
Save reports.....	104
Select comparison time periods.....	104
Glossary of Reporting Metrics for Content Recommendations.....	104
Performance dashboards.....	105
Viewing a dashboard.....	106
The Standard Dashboard.....	106
Creating a dashboard.....	106
The Content Zone Performance Dashboard Module.....	107
Element Reporting Dashboard Module.....	107
The A/B test dashboard module.....	107
The Page Site Performance Dashboard Module.....	108
Sharing a dashboard.....	108
Glossary of Reporting Metrics for Content Recommendations.....	109
Workbooks.....	110
Creating a workbook.....	110
Sharing a workbook.....	111
Viewing frequently used dashboards or reports.....	111
Grouping a set of dashboards or reports for recurring download.....	111
Configuring a workbook for fast loading.....	112
Closing all workbook tabs.....	112
A/B testing.....	112
Comparing recommendations.....	113
Creating an A/B test.....	113
Comparing offers.....	114
Testing the zone header text.....	114
Testing the number of recommendations.....	115
Testing the zone placement.....	115
Deactivating an A/B test.....	116
Measure A/B test results.....	116
Glossary.....	116
Trademarks.....	124
Terms and conditions for product documentation.....	124
Privacy Policy Considerations.....	125

Acoustic Content Recommendations documentation

Welcome to the Acoustic Content Recommendations documentation, where you can find information about how to administer and use Acoustic Content Recommendations.

Acoustic Content Recommendations translation PDF

[Acoustic Content Recommendations](#)

Getting started

[“Acoustic Digital Recommendations Overview” on page 45](#)

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

[Product legal notices](#)

[“Workflow for Configuring Content Recommendations” on page 49](#)

To configure Content Recommendations to generate recommendations for your content website (no product sales), these are the tasks that you perform and the order you perform them.

[“Performance dashboards” on page 105](#)

You can customize dashboards to see specific data. Dashboards provide a summary of the Digital Recommendations reports.

Common tasks

[“Content Offers” on page 50](#)

A content offer is a set of parameters that generates content recommendations.

[“Apply business rules to content offers using the new rules interface” on page 58](#)

For page content and page content categories, you can use the new rules interface.

[“Recommendation plans” on page 89](#)

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.

[“Configuring Site Zones” on page 96](#)

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

[“Reports” on page 102](#)

Reports provide information about the performance of your recommendations.

[“A/B testing” on page 112](#)

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.

Web site and data file configuration

[“Recommendation request functions” on page 3](#)

You can create recommendation request calls by using recommendation request functions.

[“The cmDisplayRecs function” on page 6](#)

You place the cmDisplayRecs function after all recommendation requests functions on a page.

[“Zone population function” on page 6](#)

The zone population function is the JavaScript function that your website developers code into your website.

[“The REST API” on page 25](#)

Use the this API to retrieve recommendation data as JSON objects.

[“ProductContent recommendations cookies” on page 23](#)

Digital Recommendations relies on two cookies: a session cookie and a permanent first party cookie.

Acoustic Digital Content Recommendations Configuration Guide

Overview of the configuration guide

What is in this guide.

The *Acoustic Product Recommendations Configuration Guide* is intended for users who access the product daily to:

- Work with the data files used by Acoustic Product Recommendations
- Manage communication between your website and Acoustic Product Recommendations
- Manage advanced configuration options

The *Acoustic Content Recommendations Configuration Guide* is intended for users who access use daily to:

- Work with the data files used by Acoustic Content Recommendations
- Manage communication between your website and Acoustic Content Recommendations
- Manage advanced configuration options

For an overview of the product and more information about using Acoustic Product Recommendations, see the *Acoustic Product Recommendations User's Guide*.

For an overview of the product and more information about using Acoustic Content Recommendations, see the *Acoustic Content Recommendations User's Guide*.

Use the latest `eLuminate.js` file

Ensure that you are using the most current support file.

If you are upgrading to a more recent version of Digital Recommendations, ensure that the most current file is active. Contact your Digital Analytics representative for more information.

Deploy dynamic recommendations

You can use dynamic recommendations to create upload files and page requests to load recommendations to your website.

The best implementation option for Product Recommendations is dynamic. A dynamic implementation provides more up-to-date recommendations than flat file recommendations and gives you access to more product features such as A/B testing, personalization, search-term recommendations, and fallback recommendations. Also, future enhancements of Digital Recommendations focus on dynamic capabilities and not flat file capabilities.

To implement dynamic recommendations, use this process:

1. Create two files:

- The Enterprise Product Content Mapping File (EPCMF) is 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.
- The Enterprise Category Definition File (ECDF) is a file that contains information that is used by Digital Recommendations to process recommendations. It defines a category structure where items

are in only one parent category. The ECDF must contain all of the categories that are included in the EPCMF file and all parent categories.

Digital Recommendations uses data in the ECDF and EPCMF and the offers, rules, and recommendation plans you configure in the user interface.

2. Use Acoustic Digital Analytics Import to make them accessible to Digital Recommendations.
3. Your website administrator inserts the `cmRecRequest` function, the `cmDisplayRecs` function, and one or more zone population functions to request the most recent recommendation data from Digital Recommendations. Recommendations data that is delivered to your website uses a Content Delivery Network (CDN).

For content recommendations, you do not create an ECDF or EPCMF file.

Your website administrator inserts the `cmPageRecRequest` or `cmElementRecRequest`, the `cmDisplayRecs` function and one or more zone population functions to request the most recent recommendation data from Digital Recommendations. Recommendations data that is delivered to your website uses a Content Delivery Network (CDN).

Recommendation request functions

You can create recommendation request calls by using recommendation request functions.

On your web pages that use Digital Recommendations site zones, create one or more recommendation request calls, one for each zone, followed by a single `cmDisplayRecs` call. For more information, see the example in [“Sample page source”](#) on page 16 .

The `cmPageRecRequest` function

Use the `cmPageRecRequest` function on pages with a site zone that is requesting Page Content recommendations. For example, you can have site zones that use page content or page content category offers.

Parameters

The `cmPageRecRequest` function takes up to four parameters in the following order:

Position	Parameter	Valid parameter values
1	Zone ID	The Zone ID is eight characters or fewer and is defined when you create a new zone in the Digital Recommendations interface. The zone ID is case-sensitive. This parameter is required.
2	Target Page ID	The target page ID for which recommendations are based for page content offer recommendations. For zones that are designated only to drive category recommendations, pass empty single quotation marks (') or empty double quotation marks ("") in this parameter. To use this value, the recommendation plan that is associated with the zone ID must have a step with a target symbolic argument value of <code>_SG_</code> (for specified page).

Table 1: *cmPageRecRequest* response parameters (continued)

Position	Parameter	Valid parameter values
3	Target Category ID	<p>The target category ID for which recommendations are based for page category offer recommendations. This would typically be the category ID of the target that is passed by the Target Page ID parameter in position 2. This provides the method to fall back to the category recommendations for the requested item's category if page recommendations are not available for the item Digital Recommendations requested.</p> <ul style="list-style-type: none"> For page category recommendations, pass the category ID on which to base the category recommendations. To use this value, the recommendation plan that is associated with the zone ID must have a step with a target symbolic argument value of <code>_SGC_</code> (for specified page category). If you are you using the multiple target option in your recommendation plan, include multiple target page IDs, separated by a pipe character. For example, <code>cmPageRecRequest ('zone1' , '111111 222222 333333' , 'catID')</code> <p>You can pass a maximum of 20 product IDs when you use the multiple target function.</p> <p>Do not use commas in this parameter.</p> <p>Note: A recommendation plan would typically contain this as the last step in the plan.</p>
4	Randomize Function	<p>This parameter is used only with overall top views recommendations (with a target symbolic argument value of <code>_TS_</code>). Pass an "R" as the value for this parameter and the order of the recommendations is randomly sorted on each page load.</p> <p>Best Practices Recommendation: In all other cases, it is proven to lower revenues when recommendations are not presented in the exact order that is provided by the algorithm. Statistical significance drops off with every recommendation and proceeds down the list of items in the recommendation set for a specific target.</p>

Specifying the content of the HTTP response from CDN

Dynamic recommendations data is delivered through a Content Delivery Network (CDN) by an HTTP response. This delivery occurs when a site zone triggers the `cmDisplayRecs` function.

About this task

You must define which attribute/value pairs are included in the HTTP response from the CDN.

Procedure

1. On the side navigation pane, select **Manage > Product Offers > Attributes**.
2. To configure page content offers, select **Manage > Content Offers > Page Attributes** from the side navigation pane.

3. To configure element content offers, select **Manage > Content Offers > Element Attributes** from the side navigation pane.
4. Under **Attributes to Include in Offer Response**, move the attributes to include in the response from **Available** to **Selected**.

The cmElementRecRequest function

Use this function on pages with a site zone that is requesting Element Content recommendations. For example, you may have site zones that use element content or element content category offers.

Parameters

The cmElementRecRequest function takes up to four parameters in the following order:

<i>Table 2: cmElementRecRequest response parameters</i>		
Position	Parameter	Valid parameter values
1	Zone ID	The Zone ID is eight characters or fewer and is defined when you create a new zone in the Digital Recommendations interface. The zone ID is case-sensitive. This parameter is required.
2	Target Element ID	The target element ID for which recommendations are based for element content offer recommendations. For zones that are designated solely to drive category recommendations, pass empty single quotation marks (") or empty double quotation marks (") in this parameter. To use this value, the recommendation plan that is associated with the zone ID must have a step with a target symbolic argument value of <code>_SE_</code> (for specified element).
3	Target Category ID	<p>The target category ID for which recommendations are based for element category offer recommendations. This would typically be the category ID of the target passed by the Target Element ID parameter in position 2. This provides the method to fall back to the category recommendations for the requested category if element recommendations are not available for the item Digital Recommendations requested.</p> <ul style="list-style-type: none"> • For element category recommendations, pass the category ID on which to base the category recommendations. <p>For overall top views recommendations, (if configured in the element category offer settings panel) pass a value of <code>'_TS_'</code>. To use this value, the recommendation plan that is associated with the zone ID must have a step with a target symbolic argument value of <code>_SEC_</code> (for specified element category).</p> <p>Note: A recommendation plan could typically contain this as the last step in the plan.</p>

Table 2: *cmElementRecRequest* response parameters (continued)

Position	Parameter	Valid parameter values
4	Randomize Function	<p>This parameter is used only with overall top views recommendations (with a target symbolic argument value of <code>_TS_</code>). Pass an "R" as the value for this parameter and the order of the recommendations is randomly sorted on each page load.</p> <p>Best Practices Recommendation: In all other cases, it is proven to lower revenues when recommendations are not presented in the exact order that is provided by the algorithm. Statistical significance drops off with every recommendation and proceeds down the list of items in the recommendation set for a specific target.</p>

Specifying the content of the HTTP response from CDN

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2. To configure page content offers, select **Manage > Content Offers > Page Attributes** from the side navigation pane.
3. To configure element content offers, select **Manage > Content Offers > Element Attributes** from the side navigation pane.
4. Under **Attributes to Include in Offer Response**, move the attributes to include in the response from **Available** to **Selected**.

The `cmDisplayRecs` function

You place the `cmDisplayRecs` function after all recommendation requests functions on a page.

The `cmDisplayRecs` function requires no parameters. It must appear only one time per page and be positioned after all `cmRecRequest` requests on a page. This request tells Digital Recommendations that all zone requests for the page is complete and to call the page's zone population functions with the final recommendations.

The `cmDisplayRecs` function requires no parameters. It must appear only one time per page and be positioned after all `cmPageRecRequest` and `cmElementRecRequest` requests on a page. This request tells Digital Recommendations that all zone requests for the page is complete and to call the page's zone population functions with the final recommendations.

Zone population function

The zone population function is the JavaScript function that your website developers code into your website.

You can pass 14 arguments that aid in rendering recommendations to the zone population function. You code the body of the function so that the recommendations display in a manner that is consistent with the design of your website. The result of the `cmDisplayRecs` request is one or more calls to a client-defined zone population function.

You can define one or more zone population functions. The `cmDisplayRecs` function looks for a zone population function that matches the zone ID in the recommendation request.

Name conventions for the zone population function

Zone population functions must exist for each zone and be named as according to these guidelines.

`zoneid_zp`

Where `zoneid` is case-sensitive and can contain alphanumeric or the underscore characters only. 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. This zone ID is the same value that is used when you are defining the zone with the Acoustic Digital Recommendations user interface.

Note: Store all zone population functions in a single client-defined JavaScript library and this library must be included in all necessary pages.

Arguments for the zone population function

The following arguments are passed to the zone population function.

Position	Parameter	Description and use	Field always populated?	Used by zone population function?
1	Recommended Item IDs	An array of recommended item IDs is returned in position 1. Configure the zone population function to render the appropriate content (often including but not limited to a thumbnail image and a short description) for these item IDs in the site real estate that is designated for this zone.	Yes	Standard
2	Zone ID	The zone ID that was specified in the request.	Yes	Standard
3	Target Symbolic	A value that represents the step in the recommendation plan that was used to generate the recommendations. Each step identifies an offer so by identifying the step. This value represents how the recommendation list was generated. When no recommendations are passed into the zone population function, this argument contains the value <code>'_NR_'</code> . See also “Values for the target symbolic argument” on page 10 .	Yes	Standard
4	Target ID	The item ID or category ID that was used as the basis for the list of recommended item IDs passed to position 1. Optionally, you can use this parameter to build more advanced zone population function capabilities to render the target ID on which the recommendations are based.	Yes	Optional
5	Category of Target ID	The category ID for the target ID passed to position 4, as defined in the ECDF file.	Yes	Optional
6	Attributes for the Recommended Items	A two-dimensional array of attributes for the Recommended Items that are passed to parameter 1. This parameter is useful only if you provide attributes in your EPCMF file. The attributes can be used to help render the final content and might include the location of the thumbnail image, the product page web address, the price, and the item short description. Also, a specified value can be used as an input into the personalization algorithm. For example, personalization attributes might be brand, author, or genre.	Must be configured	Optional

Table 3: Zone population function arguments (continued)

Position	Parameter	Description and use	Field always populated?	Used by zone population function?
7	Attributes for the Target ID	A one-dimensional array of attributes for the Target ID passed to parameter 4. Same as the previous parameter, however regarding the target ID.	Must be configured	Optional
8	Zone Header Text	When you create a recommendation plan, you can specify the text to display in the zone header on the web page. This parameter provides that header text for the banner of the site zone.	Yes	Standard
9	A/B Test ID	A string that contains the A/B test name, a semicolon, and the A/B test ID for the test element requested. The A/B test name and ID are defined when you create an A/B test in Digital Recommendations. If there is no A/B test for the zone, contains 'no ab test'.	Yes	Optional
10	Categories of Recommended Items	An array that contains the category ID for each of the items that were passed to position 1, as identified in the ECDF.	Yes	Optional
11	Target Page URL	The Page URL for the target ID passed to position 4.	Only populated for page content offers	Optional
12	Target Page Name	The Page Name for the target ID passed to position 4.	Only populated for page content offers	Optional
13	Page URLs of Recommended Items	An array that contains the Page URL for each of the items that were passed to position 1.	Only populated for page content offers	Optional
14	Page Names of Recommended Items	An array that contains the Page Name for each of the items that were passed to position 1.	Only populated for page content offers	Optional

Zone Population Attributes

The Enterprise Product Report attribute values are attribute values that you provide and load into your Digital Analytics database with your EPCMF. Attribute values can be no longer than 2000 characters and there can be no more than 50 attributes per item. For best results, use the minimum number of characters that are needed to support your use case.

Additionally, if you have any attributes that have a consistent prefix such as thumbnail image URL, you can either store the value of the prefix in the zone population function (and then append it to each item received in the recommendation list), or you can configure the prefix for the attribute on the **Attributes** tab in the **Offer Configuration** window. Note: do not include full URLs as attribute values in your EPCMF.

Zone Population Prefixes

You might need to add a prefix to your onsite search keywords. There are several reasons: some sites use different search modes, such as search by part number or by keyword. For example, search by department. This practice allows the web analyst to see the degree to which the search mode is used.

For search recommendations, this type of prefix must not be passed as part of the search query by the client page developer when the client passes the search term in the recommendation request. If there are prefix values to be passed, communicate with your Digital Analytics Client Consultant to determine the appropriate way to factor them out of the search term for data calculation purposes. For search term-based recommendations, the target ID that is passed into the zone population function is altered from the original format that is sent by the website in the recommendation request: spaces and punctuation are removed. This change in output is necessary so that Digital Recommendations can remove meaningless variations between otherwise identical search terms. For example, "women's blouse" and "womens blouse" are both returned as "womensblouse".

Position	Parameter	Description and use	Field always populated?	Used by zone population function?
1	Recommended Item IDs	An array of recommended item IDs is returned in position 1. Configure the zone population function to render the appropriate content (often including but not limited to a thumbnail image, a short description, and a link) for these item IDs in the site real estate that is designated for this zone.	Yes	Standard
2	Zone ID	The zone ID that was specified in the request.	Yes	Standard
3	Target Symbolic	A value that represents the step in the recommendation plan that was used to generate the recommendations. Each step identifies an offer so by identifying the step. This value represents how the recommendation list was generated. When no recommendations are passed into the zone population function, this argument contains the value '_NR_'. See also “Values for the target symbolic argument” on page 10.	Yes	Standard
4	Target ID	The item ID, category ID, or search phrase that was used as the basis for the list of recommended item IDs passed to position 1. Optionally, you can use this parameter to build more advanced zone population function capabilities to render the target ID on which the recommendations are based.	Yes	Optional
5	Category of Target ID	The category ID for the target ID passed to position 4, as defined in the analytics tag.	Yes	Optional
6	Attributes for the Recommended Items	A two-dimensional array of attributes for the Recommended Items that are passed to parameter 1. This parameter is useful if you provide attributes in your analytics tag. The attributes can be used to help render the final content and might include the location of the thumbnail image, the page web address, and an item description as examples.	Must be configured	Optional
7	Attributes for the Target ID	A one-dimensional array of attributes for the Target ID passed to parameter 4. Same the previous parameter, however regarding the target ID.	Must be configured	Optional

Table 4: Zone population function arguments (continued)

Position	Parameter	Description and use	Field always populated?	Used by zone population function?
8	Zone Header Text	When you create a recommendation plan, you can specify the text to display in the zone header on the web page. This parameter provides that header text for the banner of the site zone.	Yes	Standard
9	A/B Test ID	A string that contains the A/B test name, a semicolon, and the A/B test ID for the test element requested. The A/B test name and ID are defined when you create an A/B test in Digital Recommendations. If there is no A/B test for the zone, contains 'no ab test'.	Yes	Optional
10	Categories of Recommended Items	An array that contains the category ID for each of the items that were passed to position 1, as identified in the analytics tag.	Yes	Optional
11	Target Page URL	The Page URL for the target ID passed to position 4.	Only populated for page content offers	Optional
12	Target Page Name	The Page Name for the target ID passed to position 4.	Only populated for page content offers	Optional
13	Page URLs of Recommended Items	An array that contains the Page URL for each of the items that were passed to position 1.	Only populated for page content offers	Optional
14	Page Names of Recommended Items	An array that contains the Page Name for each of the items that were passed to position 1.	Only populated for page content offers	Optional

Values for the target symbolic argument

The target symbolic argument holds a value that represents a step in the recommendation plan and, therefore, identifies how a recommendation is generated.

You might need to code your zone population function to display values that are different based on the value that is returned by the target symbolic argument. Enclose values in either single quotation marks (') or double quotation marks (").

Table 5: Values for the target symbolic argument for product recommendations

Target Type	Argument value	Description
Product Targets	_SP_	Retrieves recommendations that are based on one or more product IDs that are specified in position 2 of the cmRecRequest.
	RVP	Retrieves recommendations that are based on the visitor's most recently viewed products.

Table 5: Values for the target symbolic argument for product recommendations (continued)

Target Type	Argument value	Description
	LCP	Retrieves recommendations that are based on the last product added to a visitor's cart as determined by the last shop5 tag that is seen by Digital Analytics.
	RPP	Retrieves recommendations that are based on the visitor's most recently purchased products as determined by the last product in an order in the last shop9 tag that is seen by Digital Analytics.
	MSP	Retrieves recommendations that are based on the visitor's most significant purchase as determined by the largest purchase (based on price) that occurred within the last six purchases.
Category Targets	_SC_	Retrieves recommendations that are based on the category ID that is specified in position 3 of the cmRecRequest. Note: If this argument retrieves the item ID that is specified in position 2 of the cmRecRequest as one of the recommendations, Digital Recommendations removes it automatically.
	RVC	Retrieves recommendations that are based on the visitor's most recently viewed category as determined by the last product view tag that is seen by Digital Analytics.
	MPC	Retrieves recommendations that are based on the visitor's most popular category as 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 given the range of issues that arise from the use of virtual categorization in the CDF.
Search Targets	_SS_	Retrieves recommendations that are based on the search term that is specified in position 5 of the cmRecRequest.
Attribute Value Targets	_SA_	Retrieves recommendations that are based on the attribute value that is specified in position 6 of the cmRecRequest.
No Recommendations	_NR_	No recommendations are passed to the zone population function. No recommendations is the expected value if the associated content area on the page is not be visible to the visitor: for example, if the visitor is in an A/B test and the associated test group does not see any recommendations, or if the fallback process for this item is exhausted and no recommendations are available for it.

Table 6: Values for the target symbolic argument for **page content** recommendations

Argument value	Description
SG	Retrieves recommendations that are based on one or more page IDs that are specified in position 2 of the cmPageRecRequest.
SGC	Retrieves recommendations that are based on the category ID that is specified in position 3 of the cmPageRecRequest. If this argument retrieves the item ID that is specified in position 2 of the cmPageRecRequest as one of the recommendations, Digital Recommendations removes it automatically.
RVG	Retrieves recommendations that are based on the visitor's most recently viewed pages.
NR	No recommendations are passed to the zone population function. _NR_ is the expected value if the associated content area on the page is not visible to the visitor: for example, if the visitor is in an A/B test and the associated test group does not see any recommendations.

Table 7: Values for the target symbolic argument for **element content** recommendations

Argument value	Description
SE	Retrieves recommendations that are based on the element ID that is specified in position 2 of the cmElementRecRequest.
SEC	Retrieves recommendations that are based on the category ID that is specified in position 3 of the cmElementRecRequest. Note: If this argument retrieves the item ID that is specified in position 2 of the cmElementRecRequest as one of the recommendations, Digital Recommendations removes it automatically.
NR	No recommendations are passed to the zone population function. _NR_ is the expected value if the associated content area on the page is not visible to the visitor: for example, if the visitor is in an A/B test and the associated test group does not see any recommendations, or if the fallback processes for this item are exhausted and no recommendations are available for it.

Zone population function examples

Here are some example parameter values that are passed to a zone population function. The numbers indicate the position of each argument.

(

1. ['FUC0-02', 'FUC0-03', 'FUDE-01', 'FUDE-02'],
The array of final recommendation IDs (four in this example).
2. 'ProdZ1',
The ID of the zone for which the recommendations were requested.
3. '_SP_',
The code that identifies the target of the recommendation plan step that was ultimately used.
4. 'FUC0-01',
The actual target that was used, and for which the four recommendations in position 1 were generated.
5. '10307',
The category ID of the target.
6. [['Modern Occasional Table', '10091', '299.95', 'KIAC_01.jpg'],
['Two-Drawer Coffee Table', '10073', '329.95', 'KIFR_02.jpg'],
['Executive Six-Drawer Desk', '10073', '1299.95', 'KIFR-01.jpg'], ['Craft Table', '10075', '299.95', 'KIAC_06.jpg']],
The two-dimensional array of attributes corresponding to the array of items that is passed in the first position. In this example, the attribute array that corresponds to 'FUC0-02' is ['Modern Occasional Table', '10091', '299.95', 'KIAC_01.jpg']. If eight recommendations are passed in position 1 and each recommendation has five attributes, the two-dimensional array contains eight rows and five columns.
7. ['Sleek Occasional Table', '10039', '159.95', 'FUDEL_02.jpg'],
The array of attributes for the target.
8. 'Recommendations from a product recently viewed',
The zone header text.
9. 'PageAB:Ctrl',
A string that contains the AB Test Name, followed by a semicolon, followed by the AB test ID of the test element requested. If there is no AB test active for this zone, then the string contains: 'no ab test'.
10. ['10091', '10073', '10073', '10075'],
The array of category IDs corresponding to the array of items that is passed in the first position.
11. '',
Not used in this example.
12. '',
Not used in this example.
13. [],
Not used in this example.

14. [],
Not used in this example.
)

Page Content Recommendations Example

(
1. ['MOMS_POT_ROAST', 'POT_ROAST_ON_THE_GRILL', 'BARBECUED_POT_ROAST', 'CROCK-POT_CHICKEN'],
The array of final recommendation IDs (four in this example).
2. 'PageZ1',
The ID of the zone for which the recommendations were requested.
3. '_SG_',
The code that identifies the target of the recommendation plan step that was ultimately used.
4. 'POT ROAST',
The actual target that was used, and for which the four recommendations in position 1 were generated.
5. '440000100708497832',
The category ID of the target.
6. [['http://www.mysite.com/moms-pot-roast.jpg', 'Oven', 'Rating: 1'], ['http://www.mysite.com/pot-roast-on-the-grill.jpg', 'Grill', 'Rating: 1'], ['http://www.mysite.com/barbecued-pot-roast.jpg', 'Oven', 'Rating: 2'], ['http://www.mysite.com/crock-pot-chicken.jpg', 'Crock pot', 'Rating: 2']],
The two-dimensional array of attributes corresponding to the array of items that is passed in the first position. In this example, the attribute array that corresponds to 'MOMS_POT_ROAST' is ['http://www.mysite.com/moms-pot-roast.jpg', 'Oven', 'Rating: 1']. If there are eight recommendations are passed in position 1 and each recommendation has five attributes, the two-dimensional array has eight rows and five columns.
7. ['http://www.mysite.com/pot-roast.jpg', '', 'Rating: 2'],
The array of attributes for the target.
8. 'Pages you might enjoy',
The zone header text.
9. 'PageAB:Ctrl',
A string that contains the AB Test Name, followed by a semicolon, followed by the AB test ID of the test element requested. If there is no AB test active for this zone, then the string contains: 'no ab test'.
10. ['440000100708497832', '440000100708498787', '440000100708497832', '440000100708498787'],
The array of category IDs corresponding to the array of items that is passed in the first position.
11. 'http://www.mysite.com/recipes/pot_roast.html',
The page url of the target.
12. 'POT ROAST',
The page name of the target.
13. ['http://www.mysite.com/recipes/moms-pot-roast.html', 'http://www.mysite.com/recipes/pot-roast-on-the-grill.html', 'http://www.mysite.com/recipes/barbecued-pot-roast.html', 'http://www.mysite.com/recipes/crock-pot-chicken.html'],
The array of page urls corresponding to the array of items that is passed in the first position.
14. ['MOMS POT ROAST', 'POT ROAST ON THE GRILL', 'BARBECUED POT ROAST', 'CROCK-POT CHICKEN'],
The array of page names corresponding to the array of items that is passed in the first position.
)

Element Content Recommendations Example

```
(  
1. ["BREAKFAST|EGG RECIPES", "DINNER|CHEESY RECIPES", "LUNCH|POULTRY  
RECIPES", "DINNER|SEAFOOD RECIPES"],  
    The array of final recommendation IDs (four in this example).  
2. "ElemRZ1",  
    The ID of the zone for which the recommendations were requested.  
3. "_SE_",  
    The code that identifies the target of the recommendation plan step that was ultimately used.  
4. "MAIN PAGE",  
    The actual target that was used, and for which the four recommendations in position 1 were  
    generated.  
5. '10307',  
    The category ID of the target.  
6. [{"Title: Healthy egg recipes", "http://www.mysite.com/recipes/breakfast-  
egg.html", "http://www.mysite.com/images/breakfast-egg.jpg", "Rating: 3", "20"},  
    {"Title: Dinner is better with cheese!", "http://www.mysite.com/recipes/  
dinner-cheese.html", "http://www.mysite.com/images/dinner-cheese.jpg", "Rating:  
1", "50"}, {"Title: Chicken for lunch", "http://www.mysite.com/recipes/lunch-  
chicken.html", "http://www.mysite.com/images/lunch-chicken.jpg", "Rating:  
4", "40"}, {"Title: Seafood that rocks!", "http://www.mysite.com/recipes/dinner-  
seafood.html", "http://www.mysite.com/images/dinner-seafood.jpg", "Rating:  
2", "100"}],  
    The two-dimensional array of attributes corresponding to the array of items that is passed in the  
    first position. In this example, the attribute array that corresponds to "BREAKFAST|EGG RECIPES"  
    is ["Title: Healthy egg recipes", "http://www.mysite.com/recipes/breakfast-  
egg.html", "http://www.mysite.com/images/breakfast-egg.jpg", "Rating:  
3", "20"]. If there are eight recommendations are passed in position 1 and each recommendation  
    has five attributes, the two-dimensional array has eight rows and five columns.  
7. ["Title: Our great recipes", "http://www.mysite.com/recipes.html", "http://  
www.mysite.com/recipes.jpg", "Rating: 2", "30"],  
    The array of attributes for the target.  
8. "Videos you might like",  
    The zone header text.  
9. "ElemAB:Test_A",  
    A string that contains the AB Test Name, followed by a semicolon, followed by the AB test ID of the  
    test element requested. If there is no AB test active for this zone, then the string contains: 'no ab test'.  
10. ["BREAKFAST", "DINNER", "LUNCH", "DINNER"],  
    The array of category IDs corresponding to the array of items that is passed in the first position.  
11. '',  
    Not used in this example.  
12. '',  
    Not used in this example.  
13. [],  
    Not used in this example.  
14. [],  
    Not used in this example.  
)
```

Library and function call placement

All pages that use dynamic recommendations must include the following libraries and functions.

In the <head></head> section (in this order):

1. Load `eLuminate.js`
2. Load `cmCustom.js` (if needed)
3. Call `cmSetClientID` (be sure to use the correct domain).

In the <body></body> section (in this order):

1. All tags other than Acoustic Digital Recommendations functions such as `cmCreateProductView` and `cmCreatePageviewTag`.
2. The zone population function can be placed anywhere in the <head></head> or <body></body>, but it must be before all `cmRecRequest` functions.
3. `cmPageRecRequest` or `cmElementRecRequest`. Include one time for each zone on the page
4. `cmRecRequest`. Include this one time for each zone on the page.
5. `cmDisplayRecs` . Call this only one time after all `cmRecRequest` calls.

For more information, see "Tagging Guide" chapter of the Acoustic Digital Analytics Implementation Guide for more information about tagging your site.

For more information, see ["Sample page source" on page 16](#).

Pass extra fields for page content with `cmCreatePageViewTag`

The Page View tag is used to capture clickstream data as the visitor moves from page to page within the site. It is also the function that passes extra fields to use for page content offers. This function is required before the extra fields can be used in business rules.

You can pass up to 15 extra fields with a limit of 100 characters per extra field. Pass extra fields in the sixth parameter, separating each extra field by `-_-`.

For example, if you need a rule to only recommend Mexican recipes with other Mexican recipes, then the information that a page is a Mexican recipe needs to be passed as an extra field. The tag would look like this:

```
cmCreatePageViewTag("Spicy Enchiladas", "Dinners", "", "", "", "Mexican-_-Susan Doe-_-Download")
```

Where Mexican, Susan Doe, and Download are all extra fields.

Pass extra fields for element content with `cmCreateElementTag`

The Element tag is used to track intra-page content. It is also the function that passes extra fields to use for element content offers. This function is required before the extra fields can be used in business rules.

You can pass up to 15 extra fields with a limit of 100 characters per extra field. Pass extra fields in the third parameter, separating each extra field by `-_-`.

For example, if you need a rule to only recommend tutorials for PC computers, then the information that an element is a tutorial for PCs needs to be passed as an extra field. The tag would look like this:

```
cmCreateElementTag("Tutorials", "Learning Tools", "PC-_-2011")
```

Where PC and 2011 are extra fields.

Disabling Console Log Message

The console log messages are enabled by default. Follow this procedure to disable the console log messages.

Procedure

Insert the following line in your page source, just after loading eluminate.js and typically in the same script block as cmSetClientID:
cmSetupOther({"IORequest.disable_console_logging":true});

Example

Following is an example:

```
<script type="text/javascript" src="//libs.coremetrics.com/eluminate.js">
</script>
<script type="text/javascript">
cmSetClientID("99999999",true,"data.coremetrics.com","yoursite.com");
cmSetupOther({"IORequest.disable_console_logging":true});
</script>
```

Enabling Console Log Message

The console log messages are enabled by default. However, if you disabled the console log messages, use this procedure to re-enable.

Procedure

1. Locate the following line in your page source. It is typically in the same script block as cmSetClientID:
cmSetupOther({"IORequest.disable_console_logging":true});
2. Change the true statement to false.

Following is an example:

Example

Following is an example:

```
<script type="text/javascript" src="//libs.coremetrics.com/eluminate.js">
</script>
<script type="text/javascript">
cmSetClientID("99999999",true,"data.coremetrics.com","yoursite.com");
cmSetupOther({"IORequest.disable_console_logging":false});
</script>
```

Sample page source

Digital Recommendations functions must be run after all other tags.

A best practice is to store all zone population functions in a single client defined JavaScript library and this library is included in all pages that display recommendations.

Sample Acoustic-hosted libraries for content recommendations

These are examples of content source using Acoustic hosted libraries.

Sample for page recommendations

The cmPageRecRequest function, and the cmDisplayRecs function:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<!-- Essentially the smallest html file possible to demonstrate Page Recommendations tagging. -->
```

```

<title>Bare Bones Example - Page Recommendations</title>

<!-- The eluminate library is the standard library required for all pages. This file contains all
necessary information for Digital Recommendations to function. -->
<script type="text/javascript" src="//libs.coremetrics.com/eluminate.js"></script>

<!-- The cmSetClientID function is required and sets values for "Client ID", 1st Party method
("Client Managed" or "Coremetrics Managed"), "Data Collection Domain" and "Cookie Domain". -->
<script type="text/javascript">cmSetClientID ("99999999", true, "data.coremetrics.com", "your_domain");</
script>

<!-- page_zpf.js is an example of a zone population function. It is recommended to include zone
population
functions in a .js file and embed the file in each page for which recommendations are desired. -->
<script src="page_zpf.js"></script>

<!-- example.css is the example style sheet -->
<LINK REL=StyleSheet HREF="example.css" TYPE="text/css"/>
</head>

<!-- In the body, define a div into which the html created by the zone population function is embedded.
The example div id defined below is "dr_zone1". -->
<body>

<!-- demo_banner is included for appearance only and is not part of Digital Recommendations -->
<div class="demo_banner"></div>

<div class="example_demo">
<div id="dr_zone1"></div>
</div>

<script type="text/javascript">
cmCreatePageviewTag("Home Page", "HOME");

// cmPageRecRequest ("ZoneID","PageID","CatID") is the call made to the Digital Recommendations library
that defines
// the first zone (for this sample page there is only one zone).
//
// "ZoneID" - zone id
// "PageID" - target page id - for "Specified Page ID(s)" recommendation plan steps, recommendations
associated
// with page "PageID" will be passed to the zone population function
// "CatID" - target page category id - for "Specified Page Category ID" recommendation plan steps,
recommendations
// associated with category "_TS_" (Top Pages) will be passed to the zone population function
cmPageRecRequest ("CBZ1","National News","_TS_");

// cmDisplayRecs triggers the recommendation process. It is required.
cmDisplayRecs();
</script>
</body>
</html>

```

Sample for element recommendations

The cmElementRecRequest function, and the cmDisplayRecs function.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<!-- Essentially the smallest html file possible to demonstrate Element Recommendations tagging. -->
<title>Bare Bones Example - Element Recommendations</title>

<!-- The eluminate library is the standard library required for all pages. This file contains all
necessary information for Digital Recommendations to function. -->
<script type="text/javascript" src="//libs.coremetrics.com/eluminate.js"></script>

<!-- The cmSetClientID function is required and sets values for "Client ID", 1st Party method
("Client Managed" or "Coremetrics Managed"), "Data Collection Domain" and "Cookie Domain". -->
<script type="text/javascript">cmSetClientID ("99999999", true, "data.coremetrics.com", "your_domain");</
script>

<!-- element_zpf.js is an example of a zone population function. It is recommended to include zone
population
functions in a .js file and embed the file in each page for which recommendations are desired. -->
<script src="element_zpf.js"></script>

<!-- example.css is the example style sheet -->
<LINK REL=StyleSheet HREF="example.css" TYPE="text/css"/>

```

```

</head>

<!-- In the body, define a div into which the html created by the zone population function is embedded.
The example div id defined below is "dr_zone1". -->
<body>

<!-- demo_banner is included for appearance only and is not part of Digital Recommendations -->
<div class="demo_banner"></div>

<div class="example_demo">
<div id="dr_zone1"></div>
</div>

<script type="text/javascript">
cmCreatePageviewTag("Home Page", "HOME");

// cmElementRecRequest ("ZoneID","ElementID","CatID") is the call made to the Digital Recommendations
// library that defines
// the first zone (for this sample page there is only one zone).
//
// "ZoneID" - zone id
// "ElementID" - target element id - for "Specified Element ID" recommendation plan steps,
// recommendations associated
// with element "ElementID" will be passed to the zone population function
// "CatID" - target element category id - for "Specified Element Category ID" recommendation plan
// steps, recommendations
// associated with category "_TS_" (Top Elements) will be passed to the zone population
// function
cmElementRecRequest ("ElemRZ1","Recipes","_TS_");

// cmDisplayRecs triggers the recommendation process. It is required.
cmDisplayRecs();
</script>
</body>
</html>

```

Sample zone population function

The following code is an example of zone population function for product recommendations that are requested with the cmRecRequest function. A modification (or rewrite) is needed for your website.

```

function test_zpfs(
  a_product_ids, // Array of recommended product IDs
  zone,          // Zone ID specified in the request (as entered on zone edit screen)
  symbolic,     // Target type:
                // _SP_ Specified Product ID(s)
                // _SC_ Specified Category ID
                // _RVP_ Last Viewed Product(s)
                // _RPP_ Last Purchased Product(s)
                // _LCP_ Last Carted Product(s)
                // _RVC_ Most Recently Viewed Category
                // _MPC_ Visitors Most Popular Category
                // _MSP_ Most Significant Purchase
                // _SA_ Specified Attribute Value
                // _SS_ Specified Search Term
                // _NR_ No Recommendations
  target_id,   // Target ID recommendations are based on
  category,   // Category of Target item
  rec_attributes, // 2 dimensional array of attributes for each recommendation
  target_attributes, // Array of attributes for the target
  target_header_txt, // Header text (as entered on recommendation plan edit screen)
  ab_test_id, // String containing AB Test Name, a semicolon, AB test ID for the test element requested
              // "no ab test" if no AB Test
  a_cat_ids, // Array of category IDs for each recommended item
  div_id) // div id defined in the html - not a standard parameter - added via the function call at bottom
{
  var html = zone + "_zp: No recommendations returned";
  if (symbolic !== '_NR_')
  {
    // attribute offset for description (offset is zero based, first attribute is index 0)
    var i_description = 2;
    // attribute offset for image
    var i_image_url = 0;
    var image_prefix = '';
    var div_rec = '<div class="dr_test_rec">';
    var n_rec = a_product_ids.length;
    var div_title = '<div class="dr_rec_title">' + target_header_txt + '</div>';
    var div_table = '<div class="dr_rec_table">';
    var image_table = '<TABLE CELLSPACING="2" CELLPADDING="0" Align="center" style="border-color:white;"><TR>';
    var lines = [];
    var width = 100 / n_rec;
    for (var ii=0; ii < n_rec; ii++)
    {
      var rec_prod_id = a_product_ids[ii];
      var image_description = rec_attributes[ii][i_description];
      var image_url = image_prefix + rec_attributes[ii][i_image_url];
      var alt_description = image_description;
      if (!image_description)
      {
        alt_description = 'No Image Available';
        image_description = '&nbsp;';
      }
    }
  }
}

```

```

    }
    lines.push('<TD valign="top" class="borderedRollover" width=' + width + '%><div class="bordered_Rollover"><TABLE ALIGN="center"
WIDTH=' + width + '%>');

    // Display image and it's description
    lines.push('<TR><TD ALIGN="center"><A HREF="' + '><IMG SRC="' + image_url + '" width=128" + ALT="' + alt_description + '" +
WIDTH=128
+ height=128 + style="border: medium none; cursor: pointer; padding-bottom: 5px; padding-top: 5px;" /></TD></TR>');
    lines.push('<TR><TD ALIGN="center"><A STYLE="text-decoration:none" HREF="' + '>' + image_description + '</A></TD></TR>');

    // Display a separator line and then all the attributes
    lines.push('<TR><TD ALIGN="center">-----</TD></TR>');
    lines.push('<TR><TD ALIGN="center">' + rec_prod_id + '</TD></TR>');
    if (a_cat_ids !== undefined)
    {
        lines.push('<TR><TD ALIGN="left">Category:<A STYLE="text-decoration:none" HREF="' + '>' + a_cat_ids[ii-1] + '</A></TD></
TR>');
    }
    for (var jj=0; jj < 50; jj++)
    {
        var attr = rec_attributes[ii][jj] ? rec_attributes[ii][jj] : '-';
        lines.push('<TR><TD ALIGN="left">Attr ' + jj + ':<A STYLE="text-decoration:none" HREF="' + '>' + attr + '</A></TD></TR>');
    }
    lines.push('<TR ><TD><TABLE BORDER="0" CELLSPACING="0" CELLSPACING="0" WIDTH=100%></TABLE></TD></TR>');
    lines.push('</TABLE></div></TD>');
    }
    html = div_recs + div_title + div_table + image_table + lines.join("\n") + '</TR></TABLE></div></div>';
}
// Put the generated html into the div defined in the .html file
document.getElementById(div_id).innerHTML= html;
}
// [ZoneID]_zp, where [ZoneID] is the zone id as entered on zone edit screen
function PDPZ1_zp(a,b,c,d,e,f,g,h,i,j)
{
    test_zpfs(a,b,c,d,e,f,g,h,i,j,'dr_zone1');
}

```

Sample page content zone population function

This is an example zone population function for page content recommendations that are requested with the cmPageRecRequest function. A modification (or rewrite) is needed for your website.

```

function test_zpfs(
    a_page_ids, // Array of recommended page IDs
    zone, // Zone ID specified in the request (as entered on zone edit screen)
    symbolic, // Target type:
    // _SG_ Specified Page ID(s)
    // _SGC_ Specified Page Category ID
    // _RVG_ Last Viewed Page(s)
    // _NR_ No Recommendations
    target_id, // Target ID recommendations are based on
    category, // Category of Target item
    rec_attributes, // 2 dimensional array of attributes for each recommendation
    target_attributes, // Array of attributes for the target
    target_header_txt, // Header text (as entered on recommendation plan edit screen)
    ab_test_id, // String containing AB Test Name, a semicolon, AB test ID for the test element requested
    // "no ab test" if no AB Test
    a_cat_ids, // Array of category IDs for each recommended item
    target_page_url, // Page URL of Target item
    target_page_name, // Page Name of Target item
    a_page_urls, // Array of Page URLs for each recommended item
    a_page_names, // Array of Page Names for each recommended item
    div_id) // div id defined in the html - not a standard parameter - added via the function call at bottom
{
    var html = zone + "_zp: No recommendations returned";
    if (symbolic !== '_NR_')
    {
        // attribute offset for description (offset is zero based, first attribute is index 0)
        var i_description = 5;
        // attribute offset for image
        var i_image_url = 0;
        var image_prefix = '';
        var div_recs = '<div class="dr_test_recs">';
        var n_recs = a_page_ids.length;
        var div_title = '<div class="dr_recs_title">' + target_header_txt + '</div>';
        var div_table = '<div class="dr_recs_table">';
        var image_table = '<TABLE CELLSPACING="2" CELLPADDING="0" Align="center" style="border-color:white;"><TR>';
        var lines = [];
        var width = 100 / n_recs;
        for (var ii=0; ii < n_recs; ii++)
        {
            var rec_page_id = a_page_ids[ii];
            var image_description = rec_attributes[ii][i_description];
            var image_url = image_prefix + rec_attributes[ii][i_image_url];
            var alt_description = image_description;
            if (!image_description)
            {
                alt_description = 'No Image Available';
                image_description = '&nbsp;';
            }
        }
        lines.push('<TD valign="top" class="borderedRollover" width=' + width + '%><div class="bordered_Rollover"><TABLE ALIGN="center"
WIDTH=' + width + '%>');

        // Display image and it's description
        lines.push('<TR><TD ALIGN="center"><A HREF="' + '><IMG SRC="' + image_url + '" width=128" + ALT="' + alt_description + '" +
WIDTH=128
+ height=128 + style="border: medium none; cursor: pointer; padding-bottom: 5px; padding-top: 5px;" /></TD></TR>');
        lines.push('<TR><TD ALIGN="center"><A STYLE="text-decoration:none" HREF="' + '>' + image_description + '</A></TD></TR>');

        // Display a separator line and then all the attributes
        lines.push('<TR><TD ALIGN="center">-----</TD></TR>');
        lines.push('<TR><TD ALIGN="center">' + rec_page_id + '</TD></TR>');
        if (a_page_urls !== undefined)
    }
}

```

```

    {
      lines.push('<TR><TD ALIGN="left">Page URL:<A STYLE="text-decoration:none" HREF="' + '>' + a_page_urls[ii-1] + '</A></TD></
TR>');
    }
    if (a_page_names !== undefined)
    {
      lines.push('<TR><TD ALIGN="left">Page Name:<A STYLE="text-decoration:none" HREF="' + '>' + a_page_names[ii-1] + '</A></TD></
TR>');
    }
    for (var jj=0; jj < 15; jj++)
    {
      var attr = rec_attributes[ii][jj] ? rec_attributes[ii][jj] : '-';
      lines.push('<TR><TD ALIGN="left">Attr ' + jj + ':<A STYLE="text-decoration:none" HREF="' + '>' + attr + '</A></TD></TR>');
    }
    lines.push('<TR ><TD><TABLE BORDER="0" CELLSPACING="0" CELLSPACING="0" WIDTH=100%></TABLE></TD></TR>');
    lines.push('</TABLE></div></TD>');
  }
  html = div_recs + div_title + div_table + image_table + lines.join("\n") + '</TR></TABLE></div></div>';
}
// Put the generated html into the div defined in the .html file
document.getElementById(div_id).innerHTML = html;
}
// [ZoneID]_zp, where [ZoneID] is the zone id as entered on zone edit screen
function CBZ1_zp(a,b,c,d,e,f,g,h,i,j,k,l,m,n)
{
  test_zpfs(a,b,c,d,e,f,g,h,i,j,k,l,m,n,'dr_zone1');
}
}

```

Sample element content zone population function

This is an example zone population function for element content recommendations that are requested with the cmPageRecRequest function. A modification (or rewrite) is needed for your website.

```

function test_zpfs(
  a_element_ids, // Array of recommended element IDs
  zone, // Zone ID specified in the request (as entered on zone edit screen)
  symbolic, // Target type:
  // _SE_ Specified Element ID
  // _SEC_ Specified Element Category ID
  // _NR_ No Recommendations
  target_id, // Target ID recommendations are based on
  category, // Category of Target item
  rec_attributes, // 2 dimensional array of attributes for each recommendation
  target_attributes, // Array of attributes for the target
  target_header_txt, // Header text (as entered on recommendation plan edit screen)
  ab_test_id, // String containing AB Test Name, a semicolon, AB test ID for the test element requested
  // "no ab test" if no AB Test
  a_cat_ids, // Array of category IDs for each recommended item
  div_id) // div id defined in the html - not a standard parameter - added via the function call at bottom
{
  var html = zone + "_zp: No recommendations returned";
  if (symbolic !== '_NR_')
  {
    // attribute offset for description (offset is zero based, first attribute is index 0)
    var i_description = 0;
    // attribute offset for image
    var i_image_url = 2;
    var image_prefix = '';
    var div_recs = '<div class="dr_test_recs">';
    var n_recs = a_element_ids.length;
    var div_title = '<div class="dr_recs_title">' + target_header_txt + '</div>';
    var div_table = '<div class="dr_recs_table">';
    var image_table = '<TABLE CELLSPACING="2" CELLSPACING="0" Align="center" style="border-color:white;"><TR>';
    var lines = [];
    var width = 100 / n_recs;
    for (var ii=0; ii < n_recs; ii++)
    {
      var rec_prod_id = a_element_ids[ii];
      var image_description = rec_attributes[ii][i_description];
      var image_url = image_prefix + rec_attributes[ii][i_image_url];
      var alt_description = image_description;
      if (!image_description)
      {
        alt_description = 'No Image Available';
        image_description = '&nbsp;';
      }
      lines.push('<TD valign="top" class="borderedRollover" width=' + width + '%><div class="bordered_Rollover"><TABLE ALIGN="center"
WIDTH=' + width + '%>');
      // Display image and it's description
      lines.push('<TR><TD ALIGN="center"><A HREF="' + '><IMG SRC="' + image_url + '" width=128" + ALT="' + alt_description + '" +
WIDTH=128
+ height=128 + style="border: medium none; cursor: pointer; padding-bottom: 5px; padding-top: 5px;" /></TD></TR>');
      lines.push('<TR><TD ALIGN="center"><A STYLE="text-decoration:none" HREF="' + '>' + image_description + '</A></TD></TR>');
      // Display a separator line and then all the attributes
      lines.push('<TR><TD ALIGN="center">-----</TD></TR>');
      lines.push('<TR><TD ALIGN="center">' + rec_prod_id + '</TD></TR>');
      if (a_cat_ids !== undefined)
      {
        lines.push('<TR><TD ALIGN="left">Category:<A STYLE="text-decoration:none" HREF="' + '>' + a_cat_ids[ii-1] + '</A></TD></
TR>');
      }
      for (var jj=0; jj < 15; jj++)
      {
        var attr = rec_attributes[ii][jj] ? rec_attributes[ii][jj] : '-';
        lines.push('<TR><TD ALIGN="left">Attr ' + jj + ':<A STYLE="text-decoration:none" HREF="' + '>' + attr + '</A></TD></TR>');
      }
      lines.push('<TR ><TD><TABLE BORDER="0" CELLSPACING="0" CELLSPACING="0" WIDTH=100%></TABLE></TD></TR>');
      lines.push('</TABLE></div></TD>');
    }
    html = div_recs + div_title + div_table + image_table + lines.join("\n") + '</TR></TABLE></div></div>';
  }
}

```



```

// Put the generated html into the div defined in the .html file
document.getElementById(div_id).innerHTML= html;
}
// [ZoneID]_zp, where [ZoneID] is the zone id as entered on zone edit screen
function ElemRZ1_zp(a,b,c,d,e,f,g,h,i,j)
{
  test_zpfs(a,b,c,d,e,f,g,h,i,j,'dr_zone1');
}

```

Sample style sheet

The following sample is an example style sheet.

```

<style type="text/css">
.example_demo
{
  width: 700px;
}
.dr_recs_title
{
  background-color: #666666;
  padding: 5px;
  color: white;
  font-family: Verdana,Arial,sans-serif;
  font-size: 11px;
  font-weight: bold;
  text-decoration: none;
  text-transform: uppercase;
}
.V5_dr_example_recs
{
  border: 1px solid #666666;
}
.V5_dr_example_recs td
{
  color: #000000;
  font-family: Verdana,Arial,sans-serif;
  font-size: 11px;
}
td.borderedRollover
{
  background-color: #FFFFFF;
  border: 1px solid #F7F7F7;
  cursor: pointer;
}
td.borderedRollover:hover
{
  background-color: #FFFFFF;
  border: 1px solid #666666;
}
.rating_bar
{
  width: 55px;
  background: url(star_x_grey.gif) 0 0 repeat-x;
  float: right;
  text-align: left;
}
.rating_bar div
{
  height: 12px;
  background: url(star_x_orange.gif) 0 0 repeat-x;
}
.demo_banner
{
  height: 100px;
  background-image: url('example.jpg');
}
</style>

```

Configure offer processing, attributes, and affinity weights

Configuring time-based weighting for session data

You can customize the affinity weighting for session data (view-to-view and view-to-buy) by specifying that the data is weighted differently based on its age.

About this task

For example, to recognize seasonal or other hot trends immediately, you can specify that the session data from the recent past is more important than session data from last week or last month. Granting a higher value to session data from the recent past also helps newly introduced items get included into recommendation lists more quickly.

Procedure

1. Click **Manage** on the side navigation menu.
2. Select **Product Offers > More Settings**.
3. Select **Content Offers > More Settings**.
4. In the **Affinity Weights for Session-Related Data** table, specify the age of data and the weight you want to give to each. To add a range to the list, click **Add time range**.

Example

For example, you can enter the following time ranges in the **Affinity Weights for Session-Related Data** table:

- More than 5 days: 90%
- More than 15 days: 85%
- More than 30 days: 80%

In this case, data from the past five days is fully weighted at 100%. Data from 6 through 15 days ago is discounted by 10% - that is, it has a 0.90 affinity weight that is applied to its affinity activity. Data from 16 through 30 days ago has an affinity weight of 0.85 applied to it. And data older than 30 days has an affinity weight of 0.80 applied to it.

Note: These values are weighting ratios that are applied to affinity scores to calculate the final affinity index - the entries do not need to add up to 100.

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.

Configuring categories for the Zone Performance Report

To use the zone performance report for content zones, you must perform the following process. Contact Acoustic Support for more information.

Procedure

1. Create a unique category in your CDF that will be the parent category for all Content zones
For example, you can create a parent category called "All Content Recommendations."
2. Set up children of that parent category to match the zone IDs of the Content recommendations.
For example, under "All Content Recommendations," you can create 2 categories: ContZ1 and ContZ2.
3. Add the `cm_vc=zone_ID` parameter to the zone population function whenever a content recommendation is selected.

Results

After completing this procedure, or if this procedure is already complete, refer to [“Selecting the parent category for the content zone performance report”](#) on page 23.

Selecting the parent category for the content zone performance report

To use the Digital Recommendations reports and dashboard for content zone performance, you must define the top-level category that the report tracks. All subcategories below this parent category are included in the report.

Procedure

1. Click **Manage** on the side navigation menu.
2. Click **Zone Performance Tracking**.
3. Click **Content Zone Performance**.
4. Select the top-level parent category to use in the zone performance report.

Select the categories to view in element reporting

To use Digital Recommendations element reporting, you need to define the categories that you want to include in the report.

Procedure

1. Click **Manage** on the side navigation menu.
2. Click **Zone Performance Tracking**.
3. Click **Element Reporting Options**.
4. Select the element categories to include.

ProductContent recommendations cookies

Digital Recommendations relies on two cookies: a session cookie and a permanent first party cookie.

Session cookie

CoreM_Ses: Groups visitors into A/B test groups. It sets only when an A/B test is active.

Permanent first party cookie

CoreM_StateCoreM_State_Content: Manages visitor data for personalization and uses a hook into the Digital Analytics libraries to update in real time. It is placed under the client domain.

The following are some of the information that is stored in the permanent cookie:

- An ordered list of the most recently viewed pages.
- An ordered list of the most recently viewed products.
- An ordered list of the items added to the cart.
- An ordered list of the items that are purchased and the prices of the purchases.
- An ordered list of the most recently viewed categories.
- Counts are maintained for the categories that are viewed to determine the visitor's most popular category.

Important: The ordered list of items added to the cart operates as stated. Digital Recommendations currently **does not** attempt to **maintain the current contents of the cart**. If a visitor purchased an item, it is on the cart list in addition to the previous purchase list in the cookie. The main intent of tracking items in the cart is to filter such items from showing in recommendations for visitors.

Cookie count management

How Digital Recommendations manages the number of cookies.

If you have an active A/B test, Digital Recommendations creates both a session cookie and the Digital Recommendations permanent (personalization) cookie. If you do not have an active A/B test, Digital Recommendations sets the Digital Recommendations personalization cookie only.

If adding the Digital Recommendations personalization cookie would cause the count on IE6 or lower browsers to exceed 20, the session cookie and the Digital Recommendations personalization cookie are not written. For all other browsers the limit Digital Recommendations manages is 50. The minimum number of cookies a browser must support per domain as specified in RFC 2109 section 6.3 is 20 and is the maximum supported for IE 6 and below. Most current browsers support 50 cookies per domain.

Cookie size management

How Digital Recommendations manages the size of the permanent cookie.

The intent of the Digital Recommendations personalization function is to keep enough recent history to manage personalization use cases on the website. Because many visitors delete cookies every three months and the average visitor purchases from a site less than once every three months, the Digital Recommendations approach effectively holds the complete visitor history.

The intent of the Digital Recommendations personalization function is to keep enough recent history to manage personalization use cases on the website. Because many visitors delete cookies every three months, the Digital Recommendations approach effectively holds the complete visitor history.

The maximum size to which the Digital Recommendations personalization cookie can grow is 270 bytes (7% of the 4096 limit), given the current default settings to roll the data off the list. If writing the cookie fails due to the size limitation, the cookie is not written. Data that is stored in the Digital Recommendations cookies are obfuscated with the CRC32 checksum to compress the size of each list. Each list in the cookie has a configurable number of elements that are stored.

For example, the default number of items purchased that is stored is the most recent six items. When the seventh item is purchased, the oldest item is rolled off the list.

For example, the default number of pages viewed that is stored is the most recent six pages. When the seventh page is viewed, the oldest page is rolled off the list.

Various browsers allow for different individual and collective cookie size. Digital Recommendations does not write to or add a cookie if this action exceeds the number of bytes allowed for the visitor's browser. So whether the maximum allowable cookie size is 4k for all cookies or 2k or 4k per cookie, the Digital Recommendations cookie is only written or updated if the additional information fits. This behavior follows the default behavior inherent in the browser.

For information, see <http://support.microsoft.com/kb/306070>.

The REST API

Use the this API to retrieve recommendation data as JSON objects.

You can also access Acoustic Digital Recommendations recommendation data through the Digital Recommendations REST API.

The REST API allows developers to build applications that interact directly with the Digital Recommendations servers to retrieve recommendation data as JSON objects. Your application can then process the data as needed and display it appropriately.

The most common use cases for the REST API are call centers, mobile applications, and server-side integrations.

Construct the HTTP request to send to the REST API

The HTTP request to the REST API must include the following URL components in the exact order that is specified here.

```
http://recs.coremetrics.com/iorequest/restapi?cm_cid=[client ID]&
cm_zoneid=[zone ID]&cm_targetid=[target product ID]&
cm_fallbackid=[fallback target ID]
```

```
http://recs.coremetrics.com/iorequest/restapi?cm_cid=[client ID]&
cm_zoneid=[zone ID]&cm_targetid=[target item ID]&
cm_fallbackid=[fallback target ID]
```

Where:

cm_cid

Required. Your client ID. For example: 00000002.

Required. Your client ID. For example: 00000003.

cm_zoneid

Required. The site zone ID. The recommendation plan associated with this zone determines the offers used by the REST API to retrieve recommendations. If the zone has an active a/b test then the recommendation plan specified in the control group in the a/b test will be used.

cm_targetid

Required. The item ID of the target. Recommendations are returned for this target ID using the offer specified in step 1 of the recommendation plan associated with the zone specified by the cm_zoneid parameter. The REST API does not support multiple targets.

cm_fallbackid

Optional. The item ID of the fallback target. Recommendations are only requested for this target when no recommendations were returned for the target specified by the cm_targetid parameter. Recommendations are returned for this target ID using the offer specified in the Fallback step of the recommendation plan associated with the zone specified by the cm_zoneid parameter. The REST API does not support multiple targets.

For example:

```
http://recs.coremetrics.com/iorequest/restapi?cm_cid=00000002&
cm_zoneid=CartZ1&cm_targetid=PROD550099&cm_fallbackid=CAT002
```

```
http://recs.coremetrics.com/iorequest/restapi?cm_cid=00000003&
cm_zoneid=PageV1&cm_targetid=PAGE760061&cm_fallbackid=CAT011
```

Display the list from the REST API

The response from the REST API is a JSON object that contains the list of recommendations, formatted as described in this section. Use the examples and descriptions in this section when you construct the code that will display the results.

Example

```
{
  "io": {
    "clientid": "00000002",
    "offer_id": 10,
    "offer_type": "P",
    "offer_name": "Product_Cross_Sell",
    "target_id": "FUL0-0101",
    "offer_version": "2016061311",
    "attributes": [
      { "name": "Product Name", "format": "string", "prefix": "" },
      { "name": "Price", "format": "string", "prefix": "$" },
      { "name": "Product Image", "format": "string", "prefix": "http://iocdn.coremetrics.com/prodqa/" }
    ],
    "rec_count": 3,
    "recs": [
      { "id": "FUL0-0201", "score": 867.96, "category": "CHAISES", "rank": 1,
        "Product Name": "RED LEATHER ROLL ARM CHAISE", "Price": "105",
        "Product Image": "images/FUL0-0201.jpg" },
      { "id": "FUDE-0101", "score": 758.2, "category": "DESKS", "rank": 2,
        "Product Name": "EXECUTIVE SIX-DRAWER DESK", "Price": "100",
        "Product Image": "images/FUDE-0101.jpg" },
      { "id": "FUDEL-0201", "score": 653.78, "category": "LAMPS", "rank": 3,
        "Product Name": "DEVINE DESK LAMP", "Price": "103",
        "Product Image": "images/FUDEL-0201.jpg" }
    ],
    "message": { "code": 200, "text": "OK", "version": "V9" }
  }
}
```

Example

```
{
  "io": {
    "clientid": "00000003",
    "offer_id": 25,
    "offer_type": "A",
    "offer_name": "Page_Content",
    "target_id": "DESK LAMPS",
    "offer_version": "2016061311",
    "attributes": [
      { "name": "Page Rating", "format": "string", "prefix": "" },
      { "name": "Avg Read Time", "format": "string", "prefix": "" },
      { "name": "Image Representation", "format": "string", "prefix": "" }
    ],
    "rec_count": 3,
    "recs": [
      { "id": "PRODUCT: MAHOGANY DESK CHAIR (CLEOF-0101)", "score": 7.15,
        "category": "CLEARANCE", "rank": 1, "page URL":
        "http://retail-demo.coremetrics.com/LiveDemo/product?catalog_id=1
        &category_id=20&prod_id=103", "page name":
        "PRODUCT: MAHOGANY DESK CHAIR (CLEOF-0101)", "Page Rating": "6",
        "Avg Read Time": "6", "Image Representation":
        "http://iocdn.coremetrics.com/prodqa/images/img6.jpg" },
      { "id": "PRODUCT: BANKER DESK LAMP (FUDEL-0101)", "score": 7.15,
        "category": "DESK LAMPS", "rank": 2, "page URL":
        "http://retail-demo.coremetrics.com/LiveDemo/product?catalog_id=1
        &category_id=6&prod_id=15", "page name": "PRODUCT: BANKER DESK LAMP (FUDEL-0101)",
        "Page Rating": "2", "Avg Read Time": "1", "Image Representation":
        "http://iocdn.coremetrics.com/prodqa/images/img2.jpg" },
      { "id": "SEARCH SUCCESSFUL", "score": 7.04, "category": "SEARCH", "rank": 3,
        "page URL": "http://retail-demo.coremetrics.com/LiveDemo/search?searchTerm=
        Desk Chair", "page name": "SEARCH SUCCESSFUL", "Page Rating": "5",
        "Avg Read Time": "1", "Image Representation":
        "http://iocdn.coremetrics.com/prodqa/images/img5.jpg" }
    ],
    "message": { "code": 200, "text": "OK", "version": "V9" }
  }
}
```

Response parameters

The following table defines the parameters in the response from the REST API.

Field	Type	Definition
io	Node	Contains all the recommendation data.
clientid	Node	Your client ID.
offer_type	Node	The type of offer, indicated by one of the following codes: <ul style="list-style-type: none">• P = product cross-sell• E = Enterprise Product Report category• C = website category• S = search term• T = attribute based offer• A = page content• B = element content• F = page content category• G = element content category
offer_name	Node	The name of the offer.
offer_version	Node	The offer version, as indicated by a timestamp with the following format: YYYYMMDDHHMISS
target_id	Node	The ID of the target.
attributes	List	The list of available attributes.
attributes.name	Node	Name of attribute.
attributes.format	Node	Format of attribute.
attributes.prefix	Node	If the attribute has a prefix that is configured, its value. For example, for a price attribute, a currency symbol (\$).
rec_count	Node	The number of recommendations that is included in the list.
recs	List	List of recommendations.
recs.id	Node	The ID of the recommended item.
recs.category	Node	The category of the recommended item.
recs.score	Node	The affinity score that is calculated for the item in the context of the target.
recs.rank	Node	The rank of the recommended item as a 1-based number.
recs.attribute	Node	An unbounded list of attribute name-value pairs that are based on number of available attributes.

Response codes

The REST API also returns one of the following HTTP response codes.

Table 9: HTTP response codes

Response code	Message	Description
200	OK	The request was successful.
404	Error	The URL was incorrect or not found.
500	Error	There was an error on the server and the request did not succeed.

REST API error codes

List of possible error codes in the REST API.

Table 10: REST API error codes

Code	Description
1	Template not published
2	Invalid template
3	Invalid Recommendation file URL
4	Recommendation file does not exist
5	Invalid Recommendation file format
6	Recommendation file unreadable
7	Recommendation files for primary/backup do not exist
8	IRS (Image Rec Server) section missing/invalid
9	PD (Product Detail) section missing/invalid
10	Recommendation instance error
11	JSON Error
12	Error creating image
13	Recommendation file contains no recommendations
14	Missing/invalid target in recommendation file
15	Missing IO Config file
16	Invalid IO Config file
17	Invalid Zone ID
18	Error Processing IO Config
19	Too few Recommendations
20	Invalid SSP (Server-Side Personalization) URL
21	SSP (Server-Side Personalization) file not found
22	MIDS section missing/invalid
23	AP section missing/invalid
24	HD section missing/invalid
25	AN section missing/invalid
26	An internal error occurred

<i>Table 10: REST API error codes (continued)</i>	
Code	Description
27	Invalid recommendation file format
100	Thumbnail image error
101	Image file not found
201	Cannot connect to URL
202	Cannot open connection to URL
203	Cannot read from URL

Response times and performance

All Digital Recommendations data that is accessed through dynamic recommendations is delivered using a Content Delivery Network (CDN).

When recommendations are requested for each item, the first request of the day can take up to 400[®] milliseconds to complete the full round trip because this data is at the CDN origin. Each subsequent response is delivered from cache at the edge where response times averages 20 milliseconds. Therefore, the typical response time for performance planning purposes is 20 milliseconds. These response times are derived from a testing environment using a lightweight HTML page which is not burdened by the heavy code requirements of a typical merchandise site. Therefore, your actual experience might be different based on the design of your page. One key step for fast response times is to place the `cmDisplayRecs` function immediately after all recommendation request functions are called.

Test before launch

Before you go into production, test these changes as you would any release of code changes to your production website. As part of this test cycle, the test recommendations in the most common browsers.

Important: The order in which recommendations are sequenced by the Digital Recommendations algorithms must be maintained when rendering recommendations on the website. Changing this order has a negative impact on the performance of recommendations.

Administration

Administrative actions are performed using the Admin console that is accessible using the **Admin** link in the Application Header.

Administrative actions (other than My Account Updates) are reserved for designated administrators from your organization.

User Administration

User administration consists of three components: My Account, Manage Users, and Manage Groups.

My Account

The My Account area is accessible to all users. It allows users to update their name, title, department, and contact information. It also provides a means for the user to change his or her password. After making changes, click **Save**.

Manage Users

The Manage Users section allows administrators to manage all of the user accounts. The search box at the top of the form allows administrators to quickly narrow the view. Click the column headers to sort the columns in ascending or descending order. To remove a user's account, select the check boxes on

the left and click **Delete Users**. To edit the user account, click the hyperlink in the User Name column. To download a list of user account information, click **Download** at the upper right of the form. Consider using the Manage Users - Full List view to quickly search for the set of users with access to a particular client ID or to find all administrators.

Creating a user

To create a New User, click **New User** at the top of the form. Complete the New User form. Name, email, user name, and Password are mandatory. On the bottom of the form, select which client IDs (if your organization has more than one) to which this user should have access. If the list is long, consider using the Search box at the top of the table. Also, choose the User Group to which he or she should belong using the drop-down menus. When you are finished, click **Save**.

Manage Users - Full List

Because some users are associated with multiple client IDs and, therefore, might be associated with multiple user groups, the Manage Users - Full List view offers a comprehensive list that can be sorted and searched. Use this view to quickly find all users that are associated with a particular client ID, find a list of all administrators, or other.

Manage Groups

User groups govern to what a particular user has access. Therefore, it is important to ensure that each user group is carefully created and that new users are placed in appropriate groups.

The Manage Groups section allows administrators to manage all of their user groups. The search box at the top of the form allows administrators to quickly narrow the view, including searches on client ID or client name. Click the column headers to sort the columns in either ascending or descending order. To remove a user group, select the check boxes on the left and click **Delete Groups**. To edit the user group, click the hyperlink in the User Group Name column. To download a list of user groups, click **Download** at the upper right of the form.

New User Group

To create a New User, click the **New User Group** button at the top of the form. Give the group a name and click **Select** to choose a client ID. Under Permission options, check the box to the left of every function to which you want the user group to have access.

Note: Only administrators have the ability to share a report view with a user group without granting them access to the report. For example, you might not want your agency to have access to all of your marketing programs, but you might want to give them access to your Display Ad Campaign results. In their user group, remove access to the "Marketing Programs" report. Then go to Marketing Programs and create a new report view (for example, Display Campaigns) and save it. Then click **Share** and share it with your agency's group.

Manage IP Restrictions

Although careful allocation and maintenance of user accounts should provide sufficient security for your reports, you can also specify the Internet Protocol (IP) addresses from which your Digital Analytics reports can or cannot be accessed.

Search for your IP range in the search box at the top. Click the column headers to sort the columns in ascending or descending order. Click the check boxes on the left and select Delete IP Ranges to remove any ranges. Click the **IP Range** hyperlink to edit the range.

Create new IP range

1. Click **New IP Range**.
2. Select a **Client ID** for which you would like to set up the IP range.
3. Decide on an action:
 - **Allow Access from the IP Range:** Allows only the IP ranges that you specify to access your reports.

- **Restrict Access from the IP Range:** Prevents the IP ranges that you specify from accessing your reports.

4. Type the **IP Range**.

5. Click **Save**.

Password Setting

If you decide that current password settings are stricter than is necessary for your business, you can adjust to a more lenient setting. The Standard password must be eight characters long, but does not require any special characters. Further, you can specify a password expiration policy.

Export Settings

The Export Settings area enables the administrator to view, edit, and create the parameters for data exports. These settings are used for Digital Recommendations, Import, the Standard Data Export, LIVEmail, and the Digital Analytics - WebSphere® Commerce integration among other exports.

Manage exports

The search box at the top of the form allows administrators to quickly narrow the view of established exports settings. Click the column headers to sort the columns in ascending or descending order. Select the check boxes on the left and click **Delete SFTP Targets** to remove export settings. To edit the export setting, click the hyperlink in the Export Target Name column. To activate a target, check the box and click **Publish**.

Create an SFTP target

To create an SFTP target, click **Create an SFTP Target**. Select the **Client ID**, give the target a name, specify the SFTP server, the port, the directory path, the user name, and the password. Then select **your SFTP transmission option**.

Extra Fields

If you are using extra fields to pass data from your Digital Analytics tags, you can give these fields user-defined titles (for example, "aliases") on this page so that they display with these meaningful names. To set up an optional or extra field:

1. The field type is set to **Enterprise Product Static Attributes**.
2. Enter the required alias for each field in the appropriate **Alias** field.
3. Select the data type for this field from the drop-down list. This can be **Text** or **Number**.
4. Enter any **Comments** appropriate for the field.
5. Click **Save**.

Project overview

Describes the overall process for implementing Product Recommendations and a sample project plan with more detail.

Table 11: Project Overview.

Step	Estimated Time to Complete	Acoustic Actions	Customer Actions
Setup	up to 3 days	<ul style="list-style-type: none"> • Activate the module after completion of the contract amendment-2 days • Provide updated versions of the required library files-2 days • Deliver a welcome kit with documentation that covers tagging, FAQs, and other reference material-1 day 	Complete client pre-launch survey-3 days.
Preparation for Production	up to 4 weeks	<ul style="list-style-type: none"> • Kick off meeting: introduce the application, review the documentation, discuss strategy, review required data inputs from clients-1 day • Consult the offer strategy and business rules-up to 1 week • Audit/advise on clients commerce tags for correct Digital Recommendations functioning. • Create offers, recommendation plans, and zones after strategy is final-up to 3 days 	<ul style="list-style-type: none"> • Produce required data files for business rules and display data- up to 3 weeks • Plan offer strategy for website areas- 4 days • Dynamic delivery recommendation clients: code web page to request, receive, and display dynamic recommendations- up to 3 weeks • Flat file delivery clients: plan database to store recommendations- up to 2 weeks
Production	1 day and ongoing	<ul style="list-style-type: none"> • Provide analysis training-3 days • Assist with post-launch issues and questions-up to 3 days 	<ul style="list-style-type: none"> • Create reports and analyze data in analytics application- up to 1 week • Use Acoustic Support for 24x7 assistance, on-demand training, and live chat.

Table 12: Sample project plan

Task #	Action	Description	Owner	Notes
1	io.js library file created	A library file is provided to the client. If using hosted libraries Digital Analytics update.	Digital Analytics	Confirm that the library is created.
2	Create offers	Create an actual offer (dynamic) and recommendation plan in the UI for testing and normal use purposes.	Digital Analytics	
3	Build the Enterprise Product Report (EPR)	Create and export the Enterprise Category Definition File and Enterprise Product Content Mapping File.	Your organization	Verify that the ECDF and EPCMF files are created before you import.
4	Attribution / Argument	Find out which arguments need to be passed or displayed in the presentation layer of recommendations.	Your organization and Digital Analytics	The product ID and category ID are to be passed, your organization handles other attributes that are used in the presentation layer.
5	Determine business rules	Business rules can be used with offers to exclude, de-emphasize, or promote items from being recommendations.	Your organization and Digital Analytics	
6	Create recommendation plans and site zones	A multi-step strategy to define targets and areas where recommendations appear on the website is created in the UI.	Your organization and Digital Analytics	
7	Technical training	A review of the code that is used with Digital Recommendations, which includes recommendation requests, cmDisplayRecs, and zone population functions.	Your organization and Digital Analytics	It is recommended that you create a zone for offer testing purposes.
8	Virtual categorization	Add virtual categories to the Category Definition File and the website so that Digital Recommendations can be tracked and reports can be run.	Your organization	
9	Training	Training in the use of the offer creation feature, rules, and basic reporting.	Digital Analytics	
10	Post-analysis	A post-analysis document is created and sent to your organization.	Digital Analytics	Conduct post-enablement analysis of Digital Recommendations with top metrics and KPIs.

Table 12: Sample project plan (continued)

Task #	Action	Description	Owner	Notes
11	Ongoing Digital Analytics support	Your organization has access to the Digital Analytics knowledge base, training materials, support (ticket support for technical and how-to questions, live-chat).		Digital Analytics online support: https://support.coremetrics.com <ul style="list-style-type: none"> • Online support • Support request • Live-chat with a business analyst • Access to web conferences and pre-recorded training sessions

The following tables describe the overall process for implementing Content Recommendations and a sample project plan with more detail.

Table 13: Project Overview.

Step	Estimated Time to Complete	Acoustic Actions	Customer Actions
Setup	up to 3 days	<ul style="list-style-type: none"> • Activate the module after completion of the contract amendment-2 days • Provide updated versions of the required library files-2 days • Deliver a welcome kit with documentation that covers tagging, FAQs, and other reference material-1 day 	Complete client pre-launch survey-3 days.

Table 13: Project Overview. (continued)

Step	Estimated Time to Complete	Acoustic Actions	Customer Actions
Preparation for Production	up to 4 weeks	<ul style="list-style-type: none"> Kick off meeting: introduce the application, review the documentation, discuss strategy, review required data inputs from clients-1 day Consult the offer strategy and business rules-up to 1 week Audit/advise on clients commerce tags for correct Digital Recommendations functioning. Create offers, recommendation plans, and zones after strategy is final-up to 3 days 	<ul style="list-style-type: none"> Produce required data files for business rules and display data- up to 3 weeks Plan offer strategy for website areas- 4 days Dynamic delivery recommendation clients: code web page to request, receive, and display dynamic recommendations- up to 3 weeks Flat file delivery clients: plan database to store recommendations- up to 2 weeks
Production	1 day and ongoing	<ul style="list-style-type: none"> Provide analysis training-3 days Assist with post-launch issues and questions-up to 3 days 	<ul style="list-style-type: none"> Create reports and analyze data in analytics application- up to 1 week Use Acoustic Customer Support for 24x7 assistance, on-demand training, and live chat.

Table 14: Sample project plan

Task #	Action	Description	Owner	Notes
1	io.js library file created	A library file is provided to the client. If using hosted libraries Digital Analytics update.	Digital Analytics	Confirm that the library is created.
2	Create offers	Create an actual offer (dynamic) and recommendation plan in the UI for testing and normal use purposes.	Digital Analytics	

Table 14: Sample project plan (continued)

Task #	Action	Description	Owner	Notes
4	Attribution / Argument	Find out which arguments need to be passed or displayed in the presentation layer of recommendations.	Your organization and Digital Analytics	For Content Page recommendations the Page ID, Page Category, Page URL and Page Name are passed. For Content Element recommendations the Element ID and Element Category are passed. Your organization handles other attributes that are used in the presentation layer.
5	Determine business rules	Business rules can be used with offers to exclude, de-emphasize, or promote items from being recommendations.	Your organization and Digital Analytics	
6	Create recommendation plans and site zones	A multi-step strategy to define targets and areas where recommendations appear on the website is created in the UI.	Your organization and Digital Analytics	
7	Technical training	A review of the code that is used with Digital Recommendations, which includes recommendation requests, cmDisplayRecs, and zone population functions.	Your organization and Digital Analytics	It is recommended that you create a zone for offer testing purposes.
8	Virtual categorization	Add virtual categories to the Category Definition File and the website so that Digital Recommendations can be tracked and reports can be run.	Your organization	
9	Training	Training in the use of the offer creation feature, rules, and basic reporting.	Digital Analytics	
10	Post-analysis	A post-analysis document is created and sent to your organization.	Digital Analytics	Conduct post-enablement analysis of Digital Recommendations with top metrics and KPIs.

Table 14: Sample project plan (continued)

Task #	Action	Description	Owner	Notes
11	Ongoing Digital Analytics support	Your organization has access to the Digital Analytics knowledge base, training materials, support (ticket support for technical and how-to questions, live-chat).		Digital Analytics online support: https://support.coremetrics.com <ul style="list-style-type: none"> • Online support • Support request • Live-chat with a business analyst • Access to web conferences and pre-recorded training sessions

Project preparation

Project preparation is key to a smooth implementation of Digital Recommendations.

To facilitate a smooth implementation process, the following preparation items are helpful.

- Load the updated Digital Analytics libraries in your production site. If you are using hosted library files, they are automatically updated.
- Review the Welcome Kit. An understanding of the terms in the Acoustic Digital Recommendations User's Guide and Configuration Guide is recommended.
- Have an idea of how you want to implement recommendations (static or dynamic recommendations, what locations on the site such as product, category, cart, or home page).
- Prepare a high-level offer strategy that reflects input from stake holders, typically merchandising managers. Considerations for offer strategy include consideration of attributes. Up to 50 attributes can be specified for product recommendations. The following are some common attributes (and examples).
 - Price - Recommend sale items only with other sale items, do not recommend products that are less than a certain percentage of items in a cart.
 - Brand - Do not recommend Brand X products with Brand Y products.
 - Stocking levels - Do not recommend an item if there are less than a specified number in inventory.
 - Category - Show dresses with dresses, not dresses with sweaters.
 - Image - Will images be shown with the recommendations?
- Determine whether you will provide data (the Enterprise Product Content Mapping File) in full with each import or will provide changed data at each load. As a best practice, you are encouraged to load the entire catalog each time.
- When new items are added and there is not enough historical data to provide recommendations, do you want to recommend the category top sellers?
- Identify any exceptions to the strategy that might need to be addressed using a rule. For instance, for all purses, show other purses unless the purse price is greater than \$500. If the purse price is greater than \$500, show other purses from the Designer category.
- Identify required data sources or input files for business rule data.
- Identify the internal project participants such as project manager, IT resources, and merchandising manager.
- Establish the approximate date when you want to launch Digital Recommendations.
- Determine the virtual categorization requirements that capture high-level categorization for merchandise reporting purposes. For example, capturing metrics on **you may also like**, or **top sellers**.

Note: There are no additional or special tagging requirements to support Digital Recommendations if you are also using Digital Analytics. If you are not using Digital Analytics and want to use Digital Recommendations, you must tag your site with a minimum set of tags. Consult an Digital Analytics representative for documentation and guidance.

These topics are beneficial to discuss internally before the project launch. Your Digital Analytics client consultant works with you to formulate the approach for the project and address any of your questions. Your client consultant will also review any adjustments to the strategy are that are needed.

To facilitate a smooth implementation process, the following preparation items are helpful.

- Load the updated Digital Analytics libraries in your production site. If you are using hosted library files, they are automatically updated.
- Review the Welcome Kit. An understanding of the terms in the Acoustic Digital Recommendations User's Guide and Configuration Guide is recommended.
- Have an idea of how you want to implement recommendations (static or dynamic recommendations, what locations on the site such as page, category, or home page).
- Prepare a high-level offer strategy that reflects input from stake holders, typically merchandising managers. Considerations for offer strategy include consideration of attributes. Up to 15 attributes can be specified for content recommendations. The following are some common attributes (and examples).
 - Rating - Do not recommend pages that have been given a low rating by users.
 - Publisher - Do not recommend articles from Publisher X with articles from Publisher Y.
 - Article Length - Do not recommend articles over a certain length to younger audiences, such as children.
 - Category - Show recipes with recipes, not recipes with political articles.
- When new items are added and there is not enough historical data to provide recommendations, do you want to recommend the category top views?
- Identify required data sources or input files for business rule data.
- Identify the internal project participants such as project manager, IT resources, and merchandising manager.
- Establish the approximate date when you want to launch Digital Recommendations.
- Determine the virtual categorization requirements that capture high-level categorization for merchandise reporting purposes. For example, capturing metrics on **you may also like**, or **top views**.

Note: There are no additional or special tagging requirements to support Digital Recommendations if you are also using Digital Analytics. If you are not using Digital Analytics and want to use Digital Recommendations, you must tag your site with a minimum set of tags. Consult an Digital Analytics representative for documentation and guidance.

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Implementing dynamic recommendations

The main steps for implementing dynamic recommendations with Digital Recommendations follow.

Procedure

1. Determine the specific site locations and Digital Recommendations site zones that are to be used.
2. Determine what information is needed in the Digital Recommendations response message.

Questions to answer include:

- If you only provide an item ID will all of the needed content for recommendations be rendered in the Digital Recommendations response message?

- Is there a requirement for a item name, thumbnail image location, product page destination web address, or other information?
- Is additional content beyond the item ID needed? If so, you must provide the additional content to Digital Analytics in the data feed as extra attributes in the Enterprise Product Content Mapping File.

The Digital Recommendations client consultant must then configure Digital Recommendations to include only the attributes that are necessary to render content in the Digital Recommendations response message.

3. Determine what information is needed in the Digital Recommendations response message.

Questions to answer include:

- If you only provide an item ID will all of the needed content for recommendations be rendered in the Digital Recommendations response message?
- Is there a requirement for a item name, thumbnail image location, page destination web address, or other information?

The Digital Recommendations client consultant must then configure Digital Recommendations to include only the attributes that are necessary to render content in the Digital Recommendations response message.

4. If extra content is needed in the response message, determine which content is mandatory and which is optional, if any.

The client consultant will configure Digital Recommendations to eliminate any recommendations where, for example, the thumbnail image location is missing.

5. Ensure that your consultant configured Digital Recommendations site zones and sample offers.
6. Ensure that you have the Digital Recommendations Libraries and a sample HTML page to assist with development activity.

The sample HTML page demonstrates how to request and render recommendations, and is a functioning sample using your recommendation data. Clients using Digital Analytics hosted libraries are updated automatically.

7. Thoroughly test the Digital Recommendations implementation.

Make sure that content is rendering as expected for all site zones before going into production. Be sure that the zone does not show any content and is invisible on the page if the response from the Content Delivery Network provides "_NR_" as the value of the target symbolic argument.

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 data Digital 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 data Digital 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 Analytics libraries.

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.

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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.

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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.

Acoustic Digital Content Recommendations User's Guide

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 Content Recommendations

Summary of features.

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 98
Multiple recommendation types	Choose from: <ul style="list-style-type: none"> • Page content recommendations • Page category recommendations • Element content recommendations • Element category recommendations 	“Content Offers” on page 50
Business rules	Digital Recommendations provides a user interface to create and manage rules that place further limits on recommendation output. Digital Recommendations supports exclusionary and de-emphasis rules.	“Apply business rules to content offers using the legacy rules interface” on page 75
Fallback recommendations	When new content is 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 89

Table 15: Key Features for Content 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 on site revenues and conversions. Also, Digital Recommendations A/B testing can be used to test 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 112
Preview	Digital Recommendations enables you to 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 54
Reports	The reports available for content recommendations are: Content Zone Performance, Element Report, and A/B Test performance reports.	“Reports” on page 102
Dashboards	Dashboards allow you to track the performance of active offers and A/B tests.	“Performance dashboards” on page 105
Integration with WebSphere Commerce	Digital Recommendations version 9 and later is tightly integrated with WebSphere Commerce version 7 FP2 and later.	WebSphere Commerce documentation.
Tracking results with Acoustic Digital Analytics	<p>You can use Digital Analytics to track offer results, including:</p> <ul style="list-style-type: none"> • Top Line Summary report • Products Report • Products Report Category Trending • Product Zoom • Report Segments • Page Category • Element Category 	Acoustic Digital Analytics documentation.

Table 15: Key Features for Content Recommendations (continued)

Feature	Description	Refer to
Tracking results with Acoustic Digital Analytics Explore	Acoustic Digital Analytics Explore provides custom reports that you can use to analyze Digital Recommendations performance.	Acoustic Digital Analytics Explore documentation.
Integration with Interact	You can deliver category top-seller recommendations from Digital Recommendations to Interact.	Interact documentation.

System requirements

To run Acoustic Digital Analytics products, you must run specific versions of software and browsers and have a minimum required amount of memory.

Maintain the following system requirements:

- Software: Adobe Flash Player, V10 or V11
- Browsers: Microsoft Internet Explorer, V9 or later. Mozilla Firefox, V29 or later. Chrome, V34 or later.
- Memory: 1 GB RAM or more
- Screen resolution: 1024 x 768 or higher

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

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 Content Recommendations

To configure Content Recommendations to generate recommendations for your content website (no product sales), these are the tasks that you perform and the order you perform them.

1. Create an offer. Product Recommendations uses the offer settings to determine how the list of content recommendations is generated. Refer to [“Content Offers” on page 50](#)
2. You may want to improve the recommendations generated by the offer in order to accomplish more specific business goals. For example, you don't want to recommend recipes for meat dishes with recipes intended for vegetarian menus. To create these improvements to your offers, you can create business rules.

For page content and page content category offers, you can use the new rules interface. Refer to [“Apply business rules to content offers using the new rules interface” on page 58](#)

For element content and element content category offers, you use the legacy rules interface. Refer to [“Apply business rules to content offers using the legacy rules interface” on page 75](#)

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 pumpkin pie recipe on the detail page for a turkey casserole, the turkey casserole is the target and the pumpkin pie recipe is the recommendation. Refer to [“Recommendation plans” on page 89](#)
4. Identify the location on your website that the recommendations appear. Examples of zones are the left side of the detail page or the bottom of the favorites page. Refer to [“Configuring Site Zones” on page 96](#)
5. View the relationship between you site zones, offers, and recommendations plans using the system overview. Refer to [“System overview dashboard” on page 98](#).
6. View what recommendations are generated for your targets. This will help you determine if changes are needed to the offer, the business rules, the recommendation plan, or the zones. Refer to [“Test recommendations and rule output” on page 100](#)
7. When you are satisfied with the targets and recommendations, you can activate the offer. Refer to [“Activating an offer” on page 53](#)
8. To view the impact that Product Recommendations has on your site performance, view the reports. Refer to [“Reports” on page 102](#)
9. 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 105](#)

You can also change existing Digital Recommendations configurations.

Content Offers

A content offer is a set of parameters that generates content recommendations.

A content offer includes all parameters that identify which content items (targets) to generate recommendations for. Content items can be any content type such as articles, recipes, instructions, videos, PDF files, and links to discussion groups. Use content offers to recommend additional content to users of your intranet, support portal, or marketing information site. The types of content offers available are:

- **Page Content Offer:** Use this content offer type to recommend specific web page content that is based on web page targets. For example, if your customer is viewing an article on your web page (the target content), you can recommend other articles, recipes, or any web page that has related content.
- **Page Content Category Offer:** Use this content offer type to recommend the top content pages within the same category as the target page.
- **Element Content Offer:** Use this content offer type to recommend documents or files that are based on the target document or file. For example, if your customer is viewing a video advertisement (the target content), you can recommend an instructional video, a PDF data sheet, or related technical documentation. To use the Element Content Offer, you must have element tags in place.
- **Element Content Category Offer:** Use this content offer type to recommend the top content elements within the same category as the target page.

Creating a Content Offer

Configure components of an offer.

Procedure

1. Click **Offer Actions** on the side navigation and select **Create New Offer**.
2. Type a name for the offer.
3. Select the offer type.
4. Refer to the related topics below 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 content offers using the legacy rules interface” on page 75](#) or [“Apply business rules to content offers using the new rules interface” on page 58](#).

Related concepts

[“Activating an offer” on page 53](#)

[“Ranking Content for Recommendation” on page 51](#)

Use the ranking options for page category and element category offers. Pages or element recommendations are presented based on how they rank in the number of views in the **Data Analysis Time Period**.

[“Update frequency” on page 51](#)

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

[“Determine the data analysis time period” on page 52](#)

Alter the data analysis time period to consider more or less data when recommendations are generated.

[“Determine delivery options” on page 52](#)

Define how you deliver data for generating recommendations and how those recommendations are delivered to your site.

[“Preview target list” on page 52](#)

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 53](#)

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

[“Apply business rules to content offers using the legacy rules interface” on page 75](#)

After you create an offer, you can add business rules to exclude or de-emphasize recommendations.

[“Preview recommendations” on page 54](#)

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 100](#)

You can avoid unexpected results by testing your rules before you put them into production.

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.

Ranking Content for Recommendation

Use the ranking options for page category and element category offers. Pages or element recommendations are presented based on how they rank in the number of views in the **Data Analysis Time Period**.

Minimum Number of Views

Specify the number of views that are required before a content item qualifies for ranking. For example, if you specify a **Minimum Number of Views** of 5, a page must be viewed at least five times during the **Data Analysis Time Period** or it will not display as a recommended item.

Do not Recommend Top %

For every category, Digital Recommendations tracks up to 50 most viewed items. This feature removes the top percentage, specified by you, of the most viewed content from these recommendations. For example, if there are 50 items or more viewed 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 viewed items are popular enough that they do not need to be recommended. Removing the top items allows for more views of items that visitors might not have found if these items were not presented as recommendations.

Enable Overall Top Viewed

Use this parameter to specify up to 15 key categories to be represented such that each defined category receives an equivalent number of recommendations. If you are not using overall top views, leave this box blank.

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.

Enable recommendation fallbacks

If your offer does not successfully generate enough recommendations, you can specify an offer in order to generate additional recommendations.

About this task

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

Procedure

1. **Enable Recommendation Fallback**
2. Select the **Fallback Source Offer**.

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

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

Determine the data analysis time period

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 visitor preferences and seasonality more rapidly. Specify a data analysis time that is long enough to accumulate search phrase-based browsing activity. You should also select the smallest data analysis time period that provides the greatest number of targets. For further assistance, contact an Digital Recommendations client consultant. Longer data analysis time periods can be requested and configured by Digital Analytics as a system setting.

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 on your website. Generally, you select the smallest data analysis time period that provides the greatest number of targets.

Determine delivery options

Define how you deliver data for generating recommendations and how those recommendations are delivered to your site.

Only **Site Zone** is available for content offers. Options include:

- **Send Master Offer File:** Enable this option to have the master offer file that contains all of the recommendations for an offer transmitted to the export destination. This 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.

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 54](#).

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.

Activating an offer

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 in the time zone defined for your client ID. Digital Recommendations files are usually processed and complete by 8 AM in the time zone defined for your client ID. 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 to ensure that your deadline is met. Review this process with your IT team.

Note: You can only activate one page category offer and one element category offer per client ID.

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.

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 [“Viewing the effect of rules on the offer” on page 73](#)

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 58](#).
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 100](#).

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 58](#).
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 58.
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 content offers using the new rules interface

For page content and page content categories, you can use the new rules interface.

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 [“Defining conditions to select rule targets”](#) on page 60
4. Define the rule using the **Promote, Exclude, Exclude All, Emphasize, De-emphasize, or De-emphasize similar** conditions.
5. Click **Save**.

Related concepts

[“Build rule queries”](#) on page 60

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

[“Promotions” on page 61](#)

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.

[“Emphasize items” on page 65](#)

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

[“De-emphasize items” on page 66](#)

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.

[“Exclude items” on page 70](#)

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

[“Defining conditions to select rule targets” on page 60](#)

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**.

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

[“Creating a pre-defined date range” on page 61](#)

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 pages or elements

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

About this task

If you are introducing new articles, you can promote them by item ID, which places them in front of other recommendations generated by offer parameters.

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 that you want to position before behavioral recommendations for the associated targets. **The characters in IDs must be entered as all uppercase letters.**
Items 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.
 - **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.

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 69](#)

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 69](#)

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 65](#)

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

[“Emphasizing specific items” on page 66](#)

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 65](#)

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 66](#)

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

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 60](#)
4. Select **Emphasize**. Select **Emphasize**. Set **%** to 100 and **factor** to 1. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 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 [“Defining conditions to select rule targets” on page 60](#)
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 60](#)

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 60](#)
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 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 60](#)
4. Select **Emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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.

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 69](#)

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 69](#)

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 67](#)

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 67](#)

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

[“De-emphasizing based on the value of an attribute” on page 68](#)

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 68](#)

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 68](#)

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

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 60](#)
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 60](#)
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 60](#)
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 60](#)
4. Select **De-emphasize**. Set **%** to 100 and **factor** to 1. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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 60](#)
4. Select **De-emphasize**. Set **%** to 100 and leave **factor** blank. See [“The percentage value” on page 69](#) and [“The factor value” on page 69](#) 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.

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 81

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.

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 70](#)

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

[“Excluding specific items from recommendation” on page 71](#)

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

[“Excluding based on the value of an attribute” on page 71](#)

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

[“Excluding by comparing attributes with the target” on page 71](#)

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

[“Excluding all recommendations for a target” on page 72](#)

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 60](#)
4. Select **Exclude**.
5. Build the rule query to match the recommendations to exclude. Refer to [“Build rule queries” on page 60](#)
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 60](#)
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 60](#)
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 60
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 60
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 22 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 22](#).

Example business rules for content using the new rules interface

Example business rules to use with content offers. You can use them as models for creating your own rules or use them to better understand how to create rules.

Example	Procedure to Use	Rule Target	Rule Class and Type for the Example
1. You want to exclude specific articles from recommendation.	“Excluding specific items from recommendation” on page 71	All Targets	Exclude > Page ID or Element ID > specify the page or element ID
2. For a software support company, exclude articles that are not of the same computer type. For example, do not recommend articles on Apple computers when the computer type is PC.	“Excluding by comparing attributes with the target” on page 80	All Targets	Exclude > Type > Compare to Target > Type is not the same as the target's attribute Note: For this example, you need to create a custom attribute that is called Type to identify if a computer is a PC or Apple.
3. You want recipes in the meat category that is excluded for vegetarian menus.	“Excluding based on the value of an attribute” on page 79	Exclude > Page Category > Site Category ID is <i>ID for vegetarian category</i>	

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 red 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.

Apply business rules to content offers using the legacy rules interface

After you create an offer, you can add business rules to exclude or de-emphasize recommendations.

For example:

- De-emphasize articles that are more than a year old.
- Emphasize recipes that use similar ingredients.
- Exclude recommendations that contain meat for vegetarian recipes

You can use any of the following rule types:

Exclusionary rules

Exclusionary rules eliminate items from recommendations based on defined criteria. For example, exclusionary rules are expressed as "Exclude recommendations where the Number of Pages is greater than 300".

De-emphasis rules

De-emphasis rules, rather than excluding, move recommendations to the back of the candidate list. For example, if an instructional video is for an older version of the product but you don't have a replacement video for the new version, a de-emphasis rule moves the item to the back of the list of valid recommendation candidates.

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 one hour of starting the blacklist. Blacklisting is only available for dynamically delivered recommendations.

Notes About Business Rules for Content Offers

- Before you can create business rules for content offers, the criteria for those business rules must be provided by the Page View or Element tag. See:
 - *Passing Extra Fields for Page Content With cmCreatePageViewTag in the Acoustic Content Recommendations Configuration Guide.*
 - *Passing Extra Fields for Page Content With cmCreateElementTag in the Acoustic Content Recommendations Configuration Guide.*
- 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.
- **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. See the *Acoustic Content Recommendations Configuration Guide* for more information on Business policy.
- **Rules data** - Do not create rules on an active offer until all rule data is loaded into the Digital Analytics database.



CAUTION: Rules that are created when rule data is not provided will erroneously eliminate items and deliver an unexpected result.

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. Refer to [“Define Rule Targets” on page 77](#).
4. Click **Update Rules**.
5. Define the rule parameters. Refer to [“Define Rule Class and Rule Type” on page 78](#).
6. Click **Save**.

Define Rule Targets

Rule Targets are the targets that you are generating recommendations for. These are the items for which the 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.

Input List

Allows you to 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.

Allows you to 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 Page Category and Element Category offers because they do not have targets that are based on individual items.

Select From Attributes

Allows you to 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.

Allows you to specify Targets by specifying one or more attributes. This option is not available for Page Category and Element Category offers because they do not have targets that are based on individual items.

Note: These Attributes are provided by the Page View or Element tag. Refer to *Passing Extra Fields for Page Content With cmCreatePageViewTag* or *Passing Extra Fields for Page Content With cmCreateElementTag* in the *Acoustic Content Recommendations Configuration Guide*.

Building complex attribute rules - 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 using the supported **AND** and **OR** logic. The following applies 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.

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.

Define Rule Class and Rule Type

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

Classes include:

- 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 summarizes the rule classes and types and where to look for more information.

Table 17: Rule Class and Type Table.

Rule Class	Rule Type	Rule Sub-type	Related Procedure
Exclusion	Exclude by ID	None	“Excluding specific items” on page 78
Exclusion	Exclude by Attribute	Recommendation Attribute Exclusion	“Excluding based on the value of an attribute” on page 79
Exclusion	Exclude by Attribute	Recommendation attribute to target attribute exclusion	“Excluding by comparing attributes with the target” on page 80
De-emphasis by criteria	De-emphasis by ID	None	“De-emphasizing specific items” on page 79
De-emphasis by criteria	De-emphasis by Attribute	Recommendation Attribute de-emphasis	“De-emphasizing based on the value of an attribute” on page 79
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 80

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.

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 22](#) for more information.

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.

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 22](#).

Excluding specific pages from recommendation

If you have pages that you do not want to display as recommendations, such as your home page, you can exclude those pages.

Procedure

1. Navigate to the **Manage > Offer Configuration > Content Offers > More Settings** page.
2. In the second text box at the bottom of the page, type the page IDs you want to exclude from recommendation. Separate each ID with a return character.
3. Click **Save**.

Identifying element categories to include for recommendation

If you have element tags that are not associated with content and you do not want to include these elements as content recommendations, you need to distinguish which categories to include. Use this procedure to identify the element categories to include for recommendation.

Procedure

1. Navigate to the **Manage > Offer Configuration > Content Offers > More Settings** page.
2. In the first text box at the bottom of the page, type the element category IDs that you want to include for recommendations. Separate each category with a return character.
3. Click **Save**.

Example business rules for content

Example business rules to use with content offers. You can use them as models for creating your own rules or use them to better understand how to create rules.

Example	Procedure to Use	Rule Target	Rule Class and Type for the Example
1. You want to exclude specific articles from recommendation.	“Excluding specific items” on page 78	All Targets	Exclusion > Exclude by ID > specify the page or element ID
2. For a software support company, exclude articles that are not of the same computer type. For example, do not recommend articles on Apple computers when the computer type is PC.	“Excluding by comparing attributes with the target” on page 80	All Targets	Exclusion > Exclude by Attribute > Recommendation Attribute to Target Attribute Exclusion > Type is not target attribute Note: For this example, you need to create a custom attribute called Type to identify if a computer is a PC or Apple.
3. You want recipes in the meat category excluded for vegetarian menus.	“Excluding based on the value of an attribute” on page 79	Select from Attributes > Page Category is Vegetarian	Exclude by Attribute > Recommendation Attribute Exclusion > Page Category is not Vegetarian.

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.

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 83.

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". The "-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 85](#).

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.

<i>Table 19: Reference information for Offer Configuration > Product Offers > Attributes</i>	
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 20: 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 21: 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 21: Reference information for Offer Configuration > Content Offers > Page View Attributes

<i>(continued)</i> 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 22: 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 23: 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 96.

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 89.
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 90.

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 90.
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.
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 “1” on page 89.

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 [“Creating a zone that is visible only if the recommendation plan is valid” on page 97](#)

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 [“Business cases for selecting targets” on page 90](#).
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

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 93 .

Table 24: Product recommendation plan targets. (continued)

Business Case	What to select for Target	Information
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 93.
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 93.

Table 24: Product recommendation plan targets. (continued)

Business Case	What to select for Target	Information
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 93.
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	<p>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.</p> <p>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.</p>
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 25: 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 93.

Table 25: Content recommendation plan targets. (continued)

Business Case	What to select for Target	Notes®
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 94](#).
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 94](#). 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.

<i>Table 26: Multiple target algorithms</i>		
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 26: 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 27: 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 27: 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 90](#)

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 90](#)

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

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.

Personalizing content recommendations

Use cookies to personalize content recommendations.

No two visitors have the same interests nor do they demonstrate identical shopping patterns. Digital Recommendations builds individual visitor profiles based on historical and in-session data to automatically present each user with a unique set of recommendations, even visitors who are not known receive highly relevant recommendations that are based on Digital Recommendations proven wisdom-of-the-crowd algorithms. Because visitor profiles are constructed in real time, recommendations can become personalized quickly, which allows Digital Recommendations to optimize recommendations for every visitor. Specific recommendations zones can be defined in the recommendation plan to offer recommendations that are based on the most recently viewed pages as recommendations.

Tracking Data in the Content Recommendations Personalization Cookie

Every time a visitor views a page that generates an Acoustic Digital Analytics page view tag, the library handles updating information in the Digital Recommendations personalization cookie. There are no specific tasks for you to do to ensure that this happens beyond ensuring that page view tags are fired. For more information, see "Content recommendation cookies," in the *Acoustic Content Recommendations Configuration Guide*.

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.

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.
#Rules	Identifies how many rules are defined in the offer.

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 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.

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 54](#).

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 73](#).

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.

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.

Reports

Reports provide information about the performance of your recommendations.

Digital Recommendations provides the performance reports and the A/B test performance report.

Content Zone Performance Report

The content zone performance report presents information that is related to the value of recommendations delivered by Digital Recommendations for content, both site-wide and broken down by categories (for example, zones and any subcategories within those zones).

You can add categories to the chart using the check boxes in the Table section below the chart.

For content offers, use the **Manage > Report Configuration > Content Zone Performance** function to select the parent category from the Category Definition File that you use to track page views driven by Digital Recommendations.

Element Reporting

Element Reporting shows the number of views of each element or element category.

You can add categories to the chart using the check boxes in the Table section below the chart.

For element offers, use the **Manage > Report Configuration > Element Reporting Options** function to select the element categories to track.

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.

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 104](#)

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 104](#)
- 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 Content 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.

% Of Total Entries

(Entry Page Views / Total Sessions) The percentage of all sessions that began with the specified page or element during the selected time period.

% Of Total Exits

(Exit Page Views / Total Sessions) The percentage of all sessions that ended with the specified page or element during the elected time period.

% Of Total Page Views

(Page Views / Total Sessions) The percentage of all sessions that viewed the specified page or element during the elected time period.

% Of Total Sessions

% of all sessions that viewed a page or element.

Average Number of Pages Viewed

Page views/Session - average number of pages views per one session

Average Time On Page

The average amount of time (displayed in minutes and seconds) that visitors spent on the specified pages, elements, or categories that roll up into a content category during the selected time period.

Bounce Rate

The percentage of sessions for total visitors who viewed only one page or element during the session and it was a page or element.

Entry Page Views

The number of sessions that begin with the specified page or element during the selected time period.

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 / Session

The average number of events per session.

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.

Exit Page Views

The number of sessions that ended with the specified page or element during the selected time period.

New Visitors

The number of first-time visitors during the selected time period.

One Page Sessions

The number of visitors that viewed only one page or element during the selected time period.

Page Url

URL of the referring page.

Page Views

The total number of page or element views by visitors for those pages that contain the named form.

Page Views / Session

The average number of page or element views per session.

Session Entry Rate

The ratio of sessions that the specified page or element was an entry page view.

Session Retry Rate

The ratio of sessions that the specified page or element required a retry.

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.

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.

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 Content Zone Performance Dashboard Module

Displays data for the content zones that are deployed on your site.

The Content Zone Performance dashboard module displays data for the content 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.

Edit a Content Zone Performance Dashboard module

You can edit a page zone performance module by clicking the Edit Dashboard icon at the upper right corner of the module.

About this task

The most common ways to edit the zone performance dashboard are:

- Change the span of time that the dashboard covers using the **Period** field.
- Change the element category you are viewing.
- Change the category that the dashboard includes using the **Zone Performance Tracking Filter**. The default for category for the page zone performance dashboard is specified in **Manage > Zone Performance Tracking > Content Zone Performance**
- Add a module to the dashboard.

Element Reporting Dashboard Module

The Element Reporting dashboard module shows the number of views for each element that is recommended by Digital Recommendations.

Edit the Element Reporting module

You can edit an element reporting module by clicking the Edit Dashboard icon at the upper right corner of the module.

About this task

The most common ways to edit the element reporting dashboard are:

- Change the span of time that the dashboard covers using the **Period** parameter.
- Change the metric that you are viewing in the module.
- Change the category that the dashboard includes using the **Zone Performance Tracking Filter**. The default for this parameter is the parent category that is specified in **Manage > Zone Performance Tracking > Element Reporting Options**.
- Add a module to the dashboard.

If you need to change the metric you are viewing, create a dashboard module.

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 Page Site Performance Dashboard Module

Displays the overall performance of recommendations over the specified number of days.

The Page Site Performance dashboard shows the total site page views and the site page views that are attributed to recommendations generated by Digital Recommendations. The metrics that are presented are:

- Total Views - Cumulative site-wide views.
- Digital Recommendations views- Cumulative page views total for all pages in the parent category that is selected on the **Manage > Zone Performance Tracking > Content Zone Performance** page.
- % of Total views - Digital Recommendations Views / Total Views.

Edit a Page Site Performance Dashboard module

You can edit a Page Site Performance module by clicking the Edit Dashboard icon at the upper right corner of the module.

About this task

The most common ways to edit the page site performance dashboard are:

- Change the span of time that the dashboard covers using **Period**.
- Change the category that the dashboard includes using the **Page Performance Tracking Filter**. The default for category for the page site performance dashboard is specified in **Manage > Zone Performance Tracking > Content 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 Content Recommendations

Descriptions for all metrics use in Reports and Dashboards.

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% Of Total Exits

(Exit Page Views / Total Sessions) The percentage of all sessions that ended with the specified page or element during the elected time period.

% Of Total Page Views

(Page Views / Total Sessions) The percentage of all sessions that viewed the specified page or element during the elected time period.

% Of Total Sessions

% of all sessions that viewed a page or element.

Average Number of Pages Viewed

Page views/Session - average number of pages views per one session

Average Time On Page

The average amount of time (displayed in minutes and seconds) that visitors spent on the specified pages, elements, or categories that roll up into a content category during the selected time period.

Bounce Rate

The percentage of sessions for total visitors who viewed only one page or element during the session and it was a page or element.

Entry Page Views

The number of sessions that begin with the specified page or element during the selected time period.

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.

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Events / Session

The average number of events per session.

Events Completed

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Exit Page Views

The number of sessions that ended with the specified page or element during the selected time period.

New Visitors

The number of first-time visitors during the selected time period.

One Page Sessions

The number of visitors that viewed only one page or element during the selected time period.

Page Url

URL of the referring page.

Page Views

The total number of page or element views by visitors for those pages that contain the named form.

Page Views / Session

The average number of page or element views per session.

Session Entry Rate

The ratio of sessions that the specified page or element was an entry page view.

Session Retry Rate

The ratio of sessions that the specified page or element required a retry.

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.

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.

Creating a workbook

You create a workbook by opening the components that you want to include in the workbook and then save them as a workbook.

About this task

Anytime you view a component, you see the component title in a tab at the top of the screen. As you open more components, more tabs display.

Procedure

1. With one or more tabs that are displayed, click **Workbooks** from the side navigation pane.
2. click **Save** from the **Actions** menu.

Results

All open tabs are saved to the workbook.

Sharing a workbook

You can use workbooks to share a group of configuration components with other users. You can also group a set of critical dashboards and reports and share it with other users of the system.

Procedure

1. Open the configuration components, dashboards, or reports that you want to include in a shared workbook.
2. Click **Workbooks** in the side navigation pane.
3. Click **Actions**.
4. Select **Save**.
5. Select **Save as a new workbook** and type a descriptive name for the workbook.
6. Select the saved workbook from the side navigation pane.
7. From the **Actions** menu, select **Share**.
8. Select who you want to share the workbook with.

What to do next

You can stop sharing a workbook by selecting **Keep private to workbook owner** from the **Share Workbook** dialog box.

Viewing frequently used dashboards or reports

You can set up workbooks that contain the reports and dashboard that you use frequently.

Procedure

1. Open all reports and dashboards that you frequently view.
2. Click **Workbooks** in the side navigation pane.
3. Click **Actions**.
4. Select **Save**.
5. Select **Save as a new workbook** and type an appropriate name for the workbook.

What to do next

The next time that you use the system, select this workbook.

Grouping a set of dashboards or reports for recurring download

If you regularly download reports and dashboards, it is more efficient to group your reports and dashboards into a workbook and download the workbook. This practice ensures that your information looks the same each time you download.

Procedure

1. Open all Report and Dashboard that you report on.
2. Click **Workbooks** in the side navigation pane.
3. Select **Actions**.
4. Select **Save**.
5. Select **Save as a new workbook** and type an appropriate name for the workbook.
6. Click **Workbooks**.
7. Select **Actions** from the side navigation pane.
8. Select **Download**.

What to do next

The next time that you want to download these dashboards and reports, select this workbook and repeat step 5.

Configuring a workbook for fast loading

If you have a workbook that you use frequently, you can keep the workbook in cache so that it loads faster the next time you open it.

Procedure

1. Click **Workbooks** from the side navigation pane.
2. Select the workbook that you want to cache.
3. Select **Cache** from the **Actions** menu. You can cache up to 10 workbooks.

Closing all workbook tabs

When you are finished viewing or configuring items in your workbook, you can quickly close all tabs with a single action.

Procedure

Select **Workbooks Actions > Close All Tabs**

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.

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.

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 116](#)

You have different ways to measure your A/B test results.

Related tasks

[“Comparing recommendations” on page 113](#)

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 114](#)

Another useful test is comparing results of two offers that are configured differently.

[“Testing the zone header text” on page 114](#)

You can test the effect of changes to the Zone Header Text.

[“Testing the number of recommendations” on page 115](#)

You can test if the number of recommendations improves results.

[“Testing the zone placement” on page 115](#)

Tests how visitors respond to recommendations that are placed in different zones.

[“Deactivating an A/B test” on page 116](#)

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.

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.

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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.

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 data Digital 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 data Digital 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 Analytics libraries.

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.

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