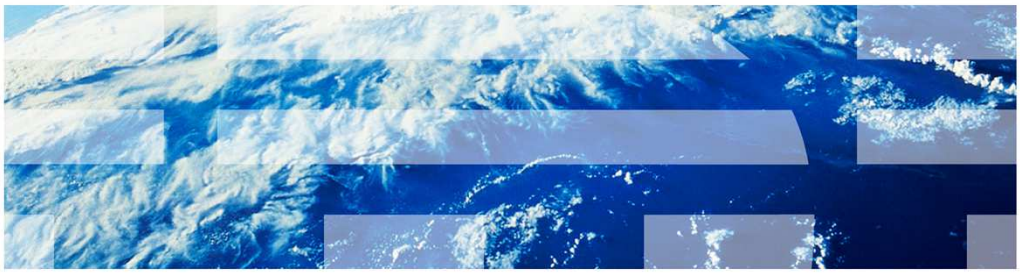
WebSphere Commerce V7 Feature Pack 6

Merchandising and search



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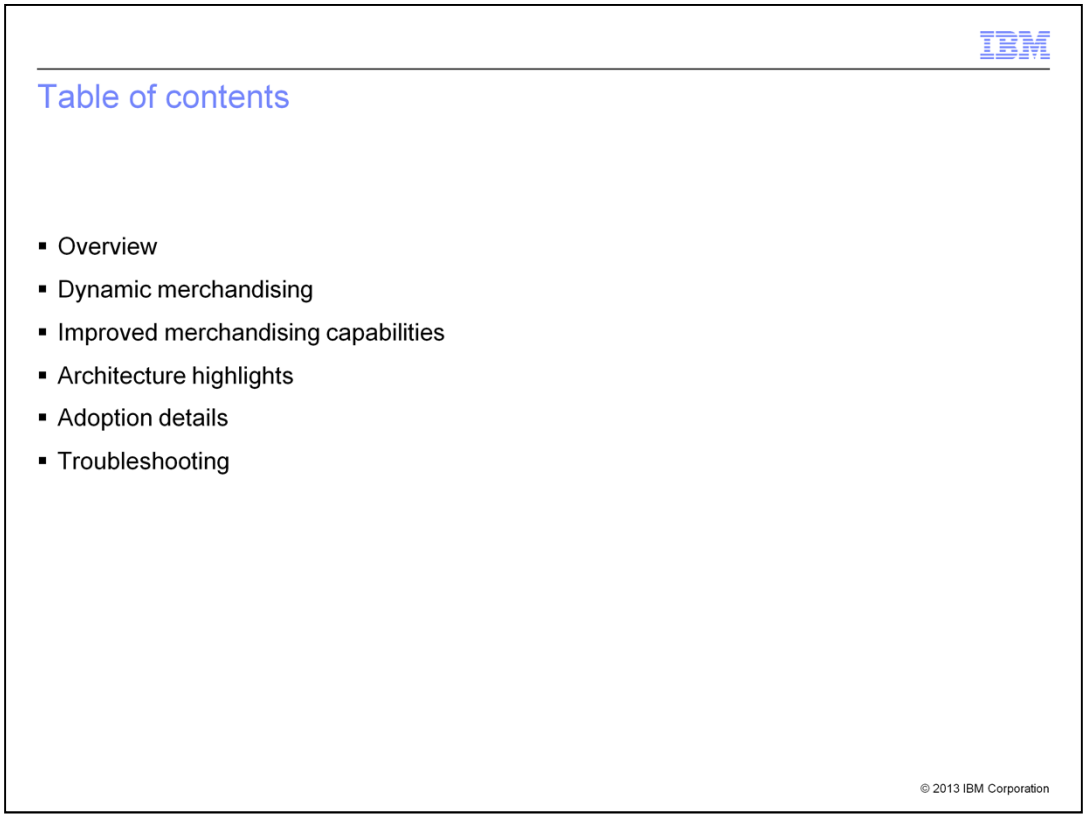
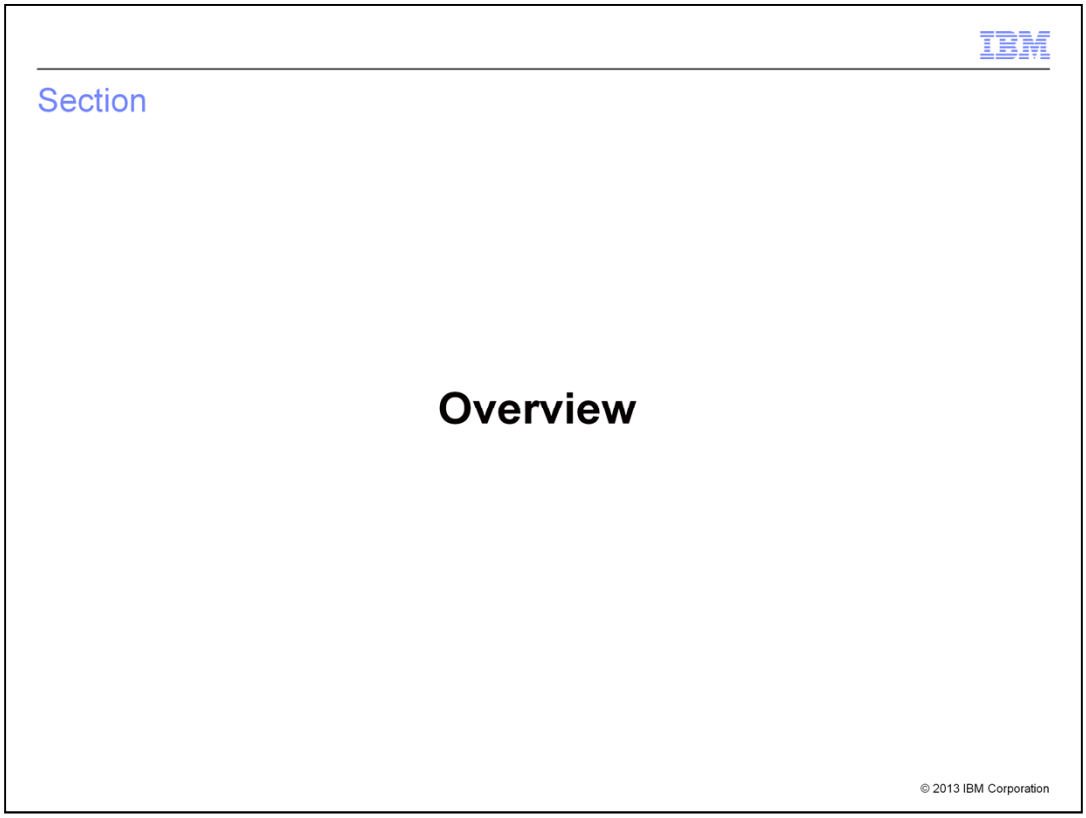
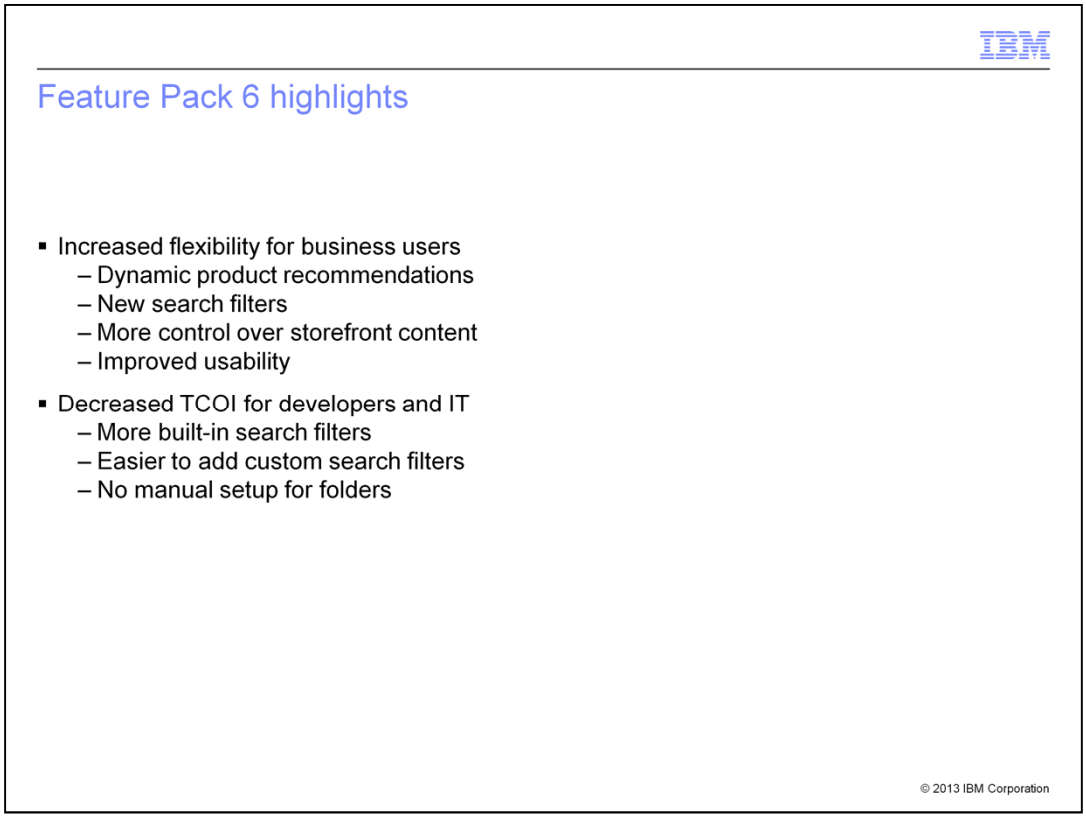
This presentation provides an overview of the merchandising and search capabilities in Version 7 Feature Pack 6. You should have a general knowledge of the features in WebSphere® Commerce Version 7 before viewing this presentation.



This presentation begins with a short overview of the merchandising and search improvements in Feature Pack 6. Next, the dynamic merchandising features and improved merchandising capabilities are discussed in more detail. Following the feature summaries are the architecture highlights for the search enhancements. The presentation concludes with some tips for adopting these new features and troubleshooting.

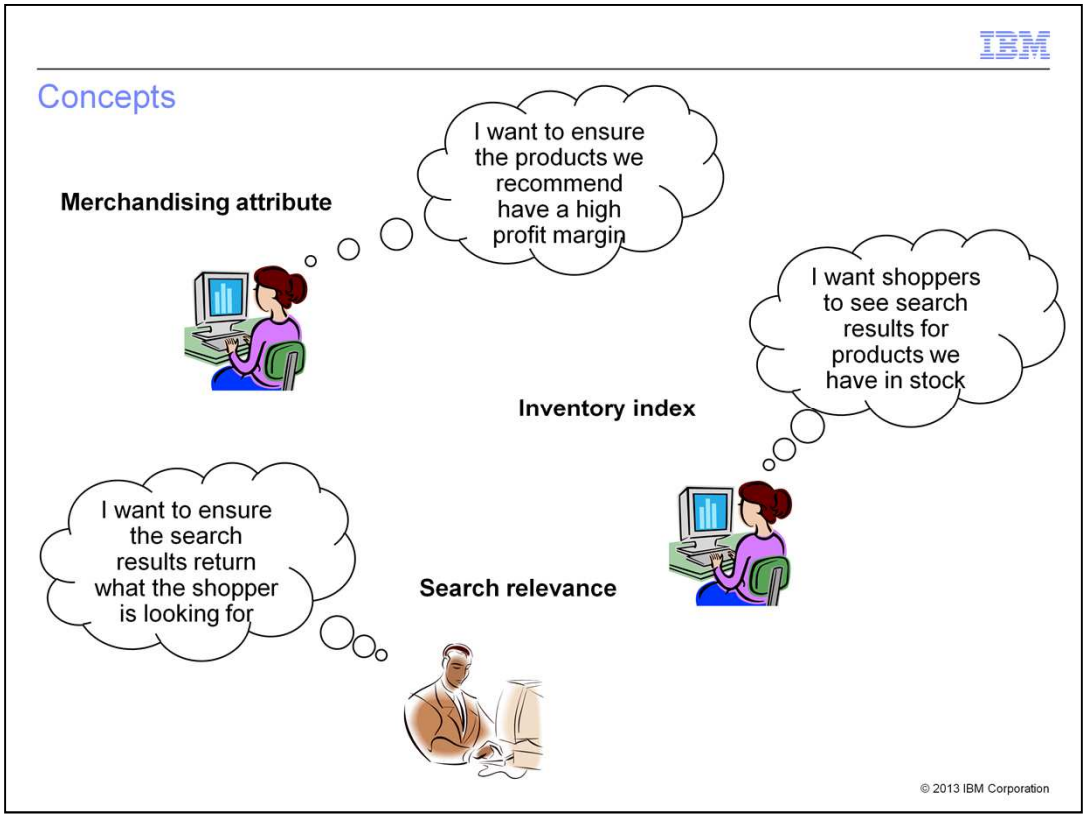


This section provides an overview of the merchandising and search enhancements.



Feature Pack 6 combines enhancements to business user tools with greater search capabilities to provide increased flexibility for business users and decrease the cost of implementation for developers and IT. For business users, combining merchandising and search allows for more dynamic product recommendations and increased filtering ability for product recommendations and search rules. Business users also benefit from more control over e-Marketing Spot display in the storefront and built-in support for image maps. Folder support improves organization of Management Center business objects and support for extended site overrides in the UI makes it easy to specify extended site–specific product descriptions.

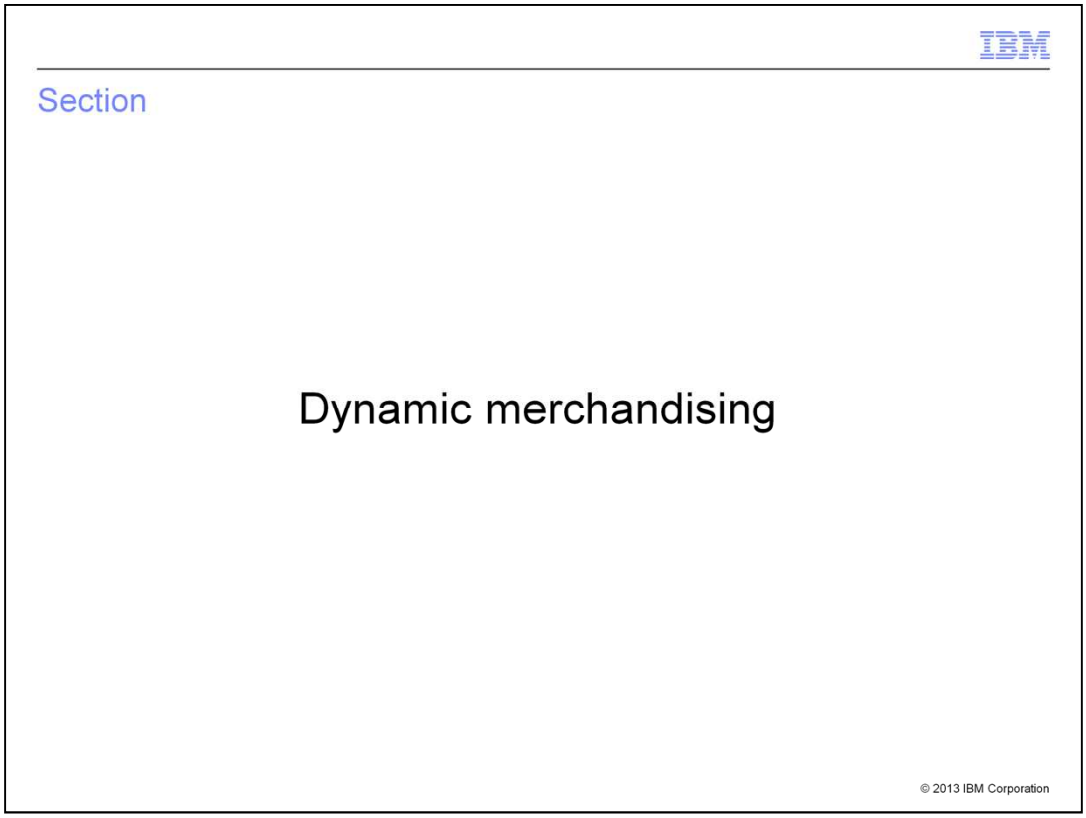
Feature Pack 6 enhancements lower the total cost of implementation by providing built-in support for using attributes as search filters and simplifying the process of adding custom search filters. Also, the UI support for folders means they no longer need to be created manually by IT.



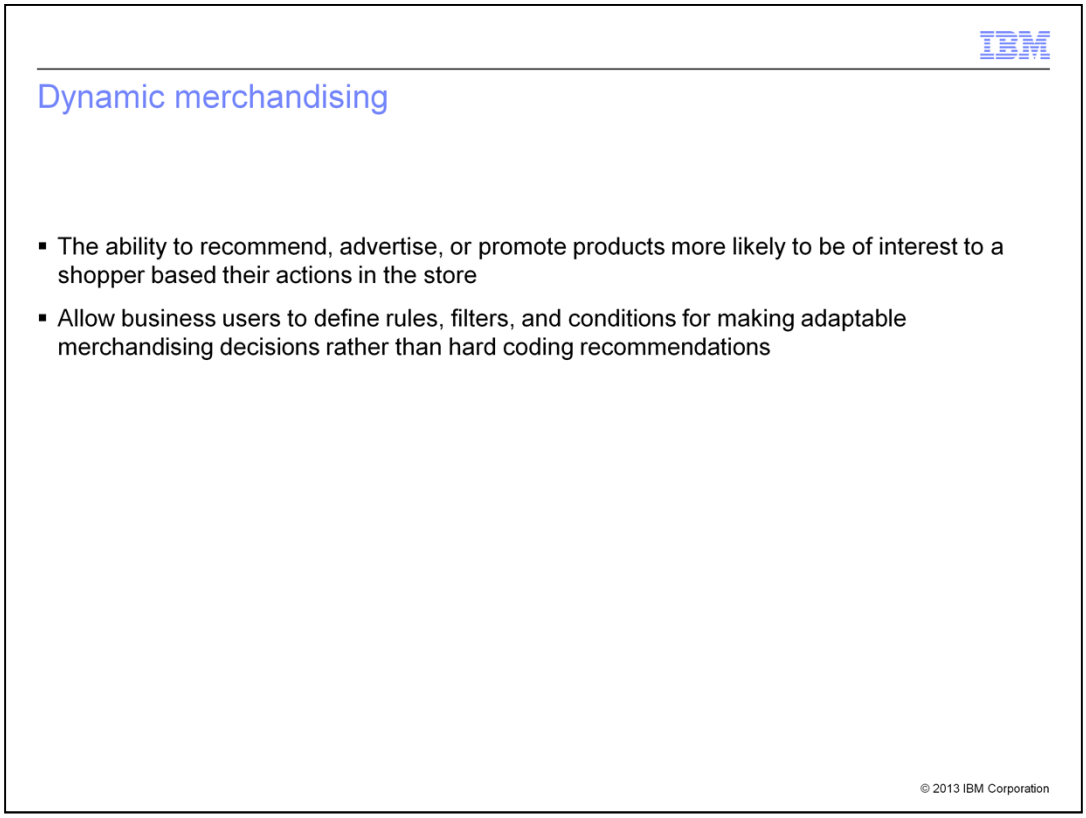
Feature Pack 6 introduces three new concepts for merchandising and search. The first is a merchandising attribute. A merchandising attribute is an attribute you might want to use to control product recommendations or search results in the store but don't want to display to the shopper. For example, if you want to recommend products with higher profit margins, the profit margin becomes a merchandising attribute.

An inventory index is a new type of index that keeps track of the inventory available for your online store. This is not your master inventory record but it allows you to include inventory considerations in your merchandising and search rules. For example, if you want to eliminate out of stock products from a customer's search results, you can define a rule that checks the inventory index when running a search query.

Search relevance allows you to specify which fields in your search index should be the most important in calculating the search results. For example, if you want to ensure shoppers see search results where the search term matches the product name ahead of results where the search term matches the description. To achieve this, you make the name field more relevant that the description field.



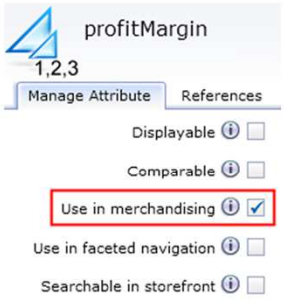
This section examines the dynamic merchandising features in more detail.



The concept of dynamic merchandising continues to expand and evolve in Feature Pack 6. This release further extends the business user's ability to promote products most likely to be of interest to their customers. By defining rules, setting filters and creating conditions, business users can create adaptable product recommendations and search rules that are much more powerful than static recommendations.

Merchandising attributes

- New “Use in merchandising” property
- Usage
  - Enable business users to tag products with hidden attributes
  - Build attribute-based product recommendations
  - Create attribute-based search rules
  - Hide attributes and values from shoppers
    - Attribute is only visible if another property is also selected
- Examples
  - Exclusive
  - Clearance
  - Profit margin



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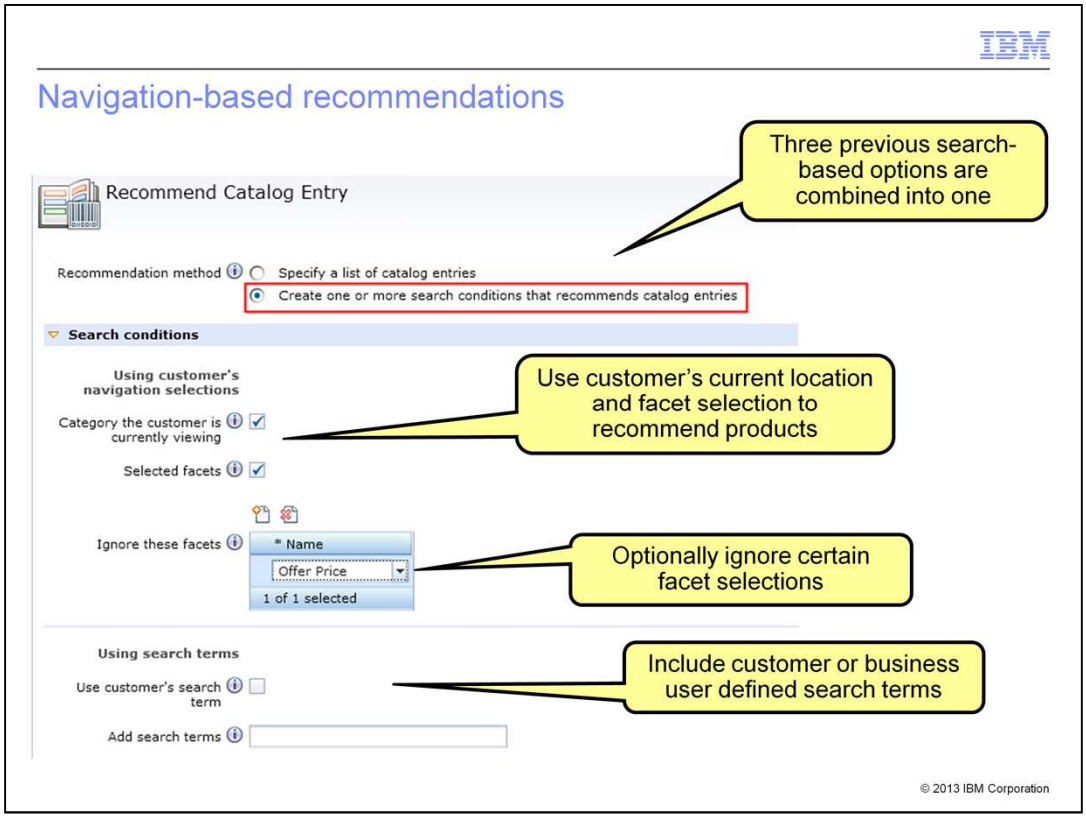
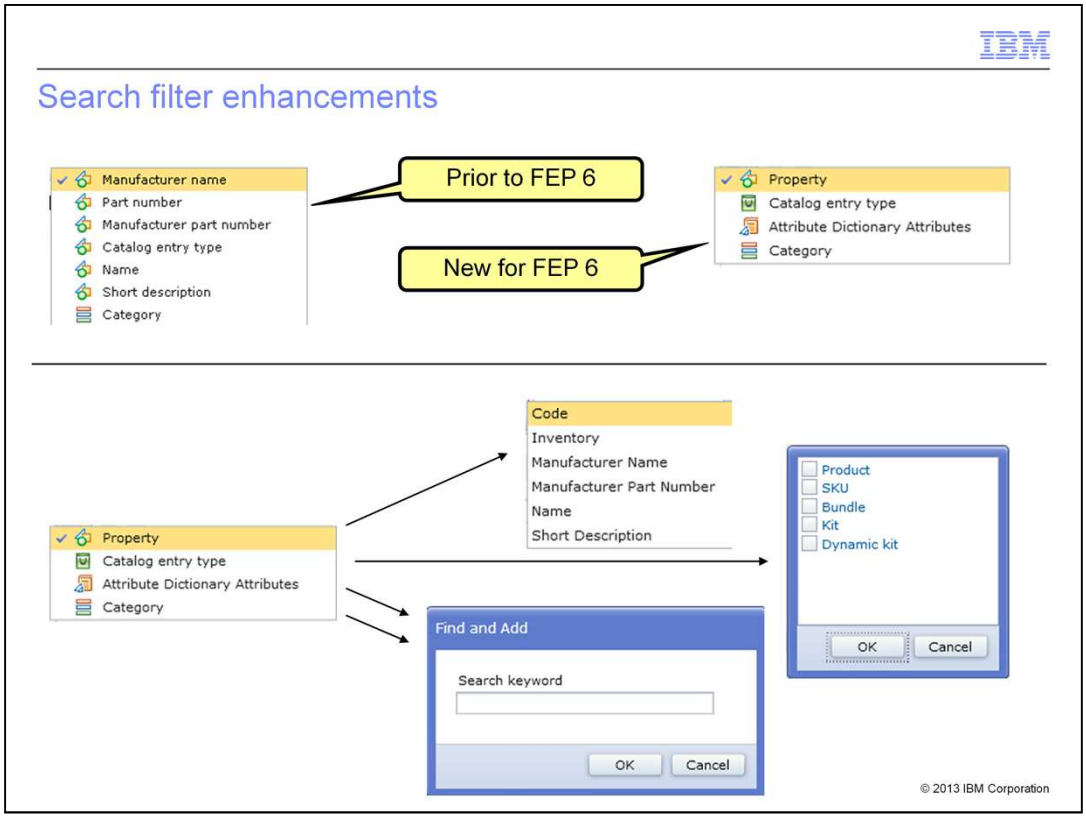
To support dynamic merchandising in the storefront, a new property has been added for attribute dictionary attributes. The “Use in merchandising” attribute signals that the attribute should be added to the search index but should not be displayed to shoppers. If you want shoppers to see the attribute, one of the other properties such as “displayable” or “searchable in storefront” should be selected as well. An example of a merchandising attribute is the profit margin for a product. This is not an attribute shoppers should see but it is valuable for business users in creating product recommendations and search rules. Once an attribute is flagged as “use in merchandising”, it is available when setting search-based product recommendations and search rules.

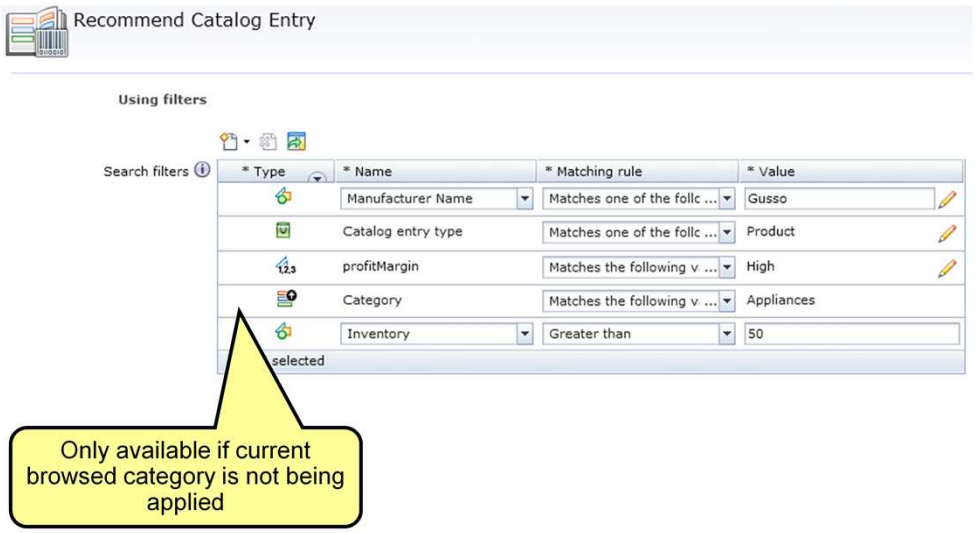


In Feature Pack 6, the “Recommend Catalog Entry” web activity action has been updated with enhanced search-based recommendation capabilities. The three search-based options introduced in Feature Pack 2 have been combined into a single condition-based (dynamic) recommendation option in Feature Pack 6. The condition-based recommendations include navigation-based conditions and filter-based conditions. On this slide, you can see the navigation-based conditions that can be used to recommend products. These include the category the shopper is currently viewing, any facets they have selected and their search term. You can further refine the navigation conditions by opting to ignore certain facets, such as offer price, or by adding search terms other than those entered by the shopper.



Search filters allow you to set criteria that define a set of products to be recommended in a product recommendation or returned as search results. The search filters provided in Feature Pack 6 provide greater control than those available in previous releases. Filters have been organized into four types: property, catalog entry type, attribute dictionary attributes, and category. When you select a property filter, you can then choose from any of the available properties. New properties can be added to this list as a customization. The inventory property is only available when the inventory index is configured. For each property you add to the filter, you can specify a matching rule and value. When you select a catalog entry type filter, you then choose which of the five types to include. For attribute dictionary attributes and category filters, you use the find and add window to locate the attribute or category to add. Attribute dictionary attributes must be marked as merchandising attributes in order to be used in a filter.

Filter-based recommendations



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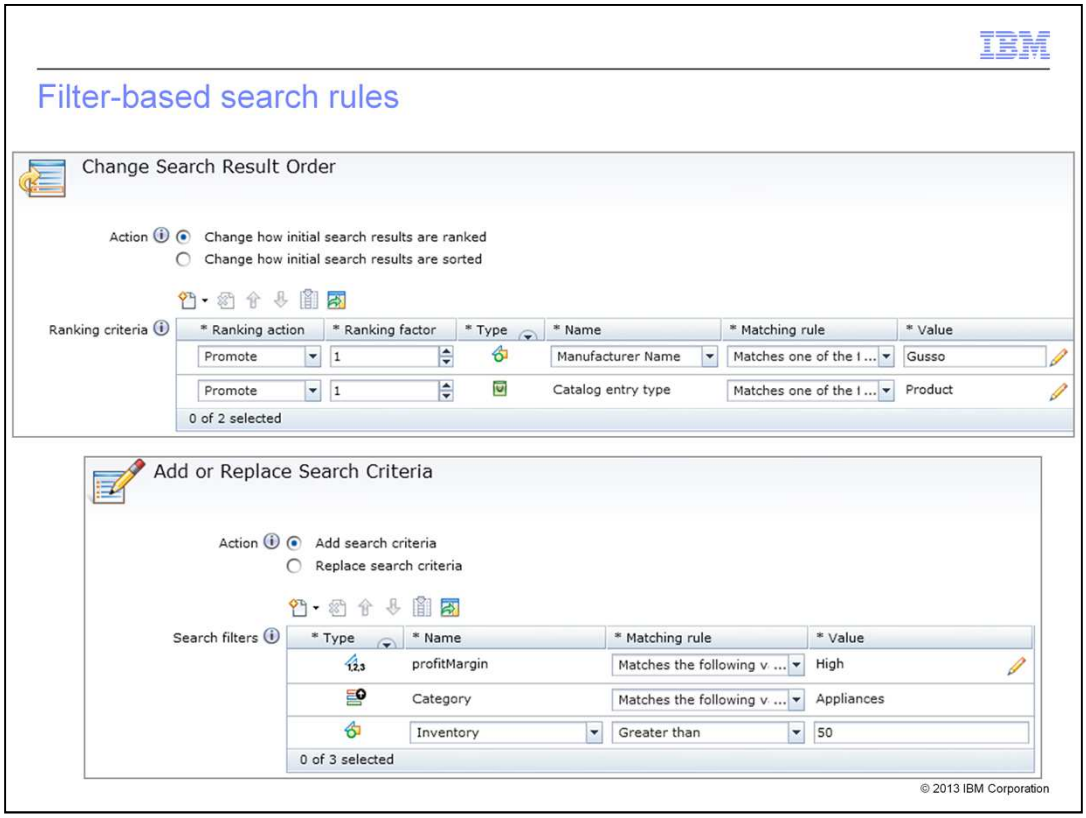
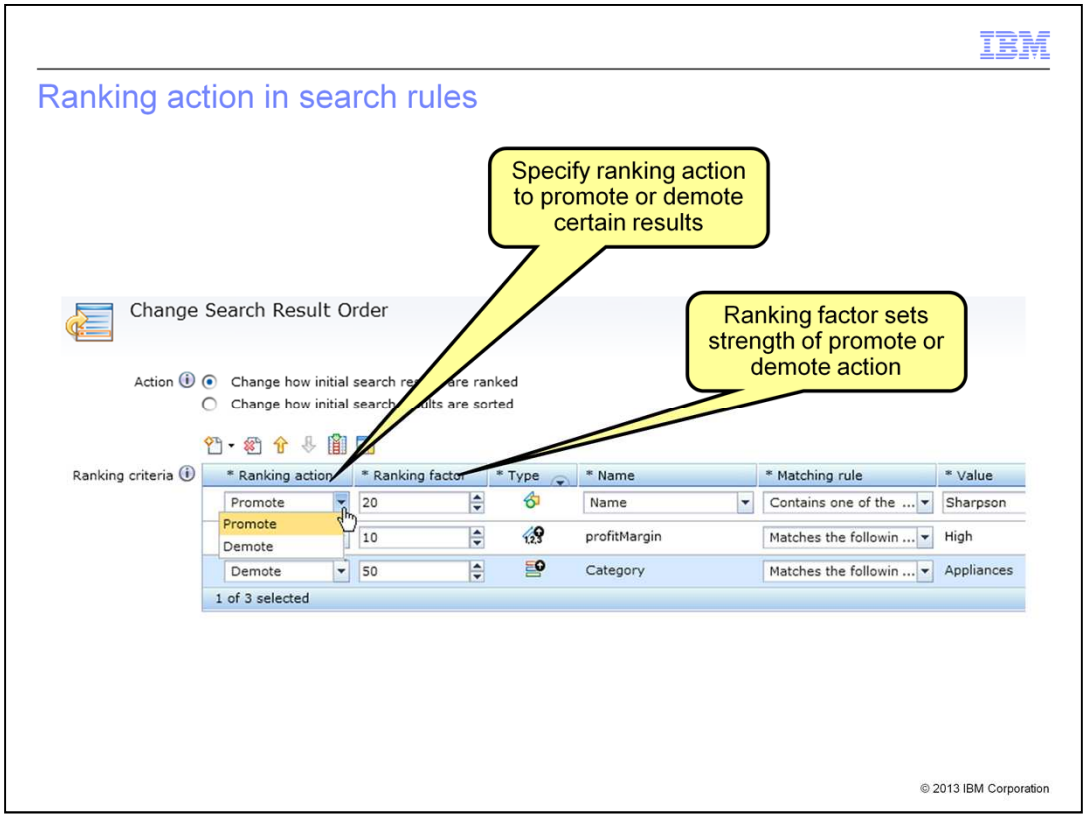
In addition to navigation-based conditions, you can also specify filter-based conditions when creating a product recommendation rule. The screen capture on this slide shows an example of each type of filter. The category filter is only available if the current browsed category is not selected as a navigation-based condition. The profit margin filter shows how you use a merchandising attribute to recommend products with a high profit margin. In this case, the attribute needs to be assigned to all products that fit your store's definition of high profit margin.

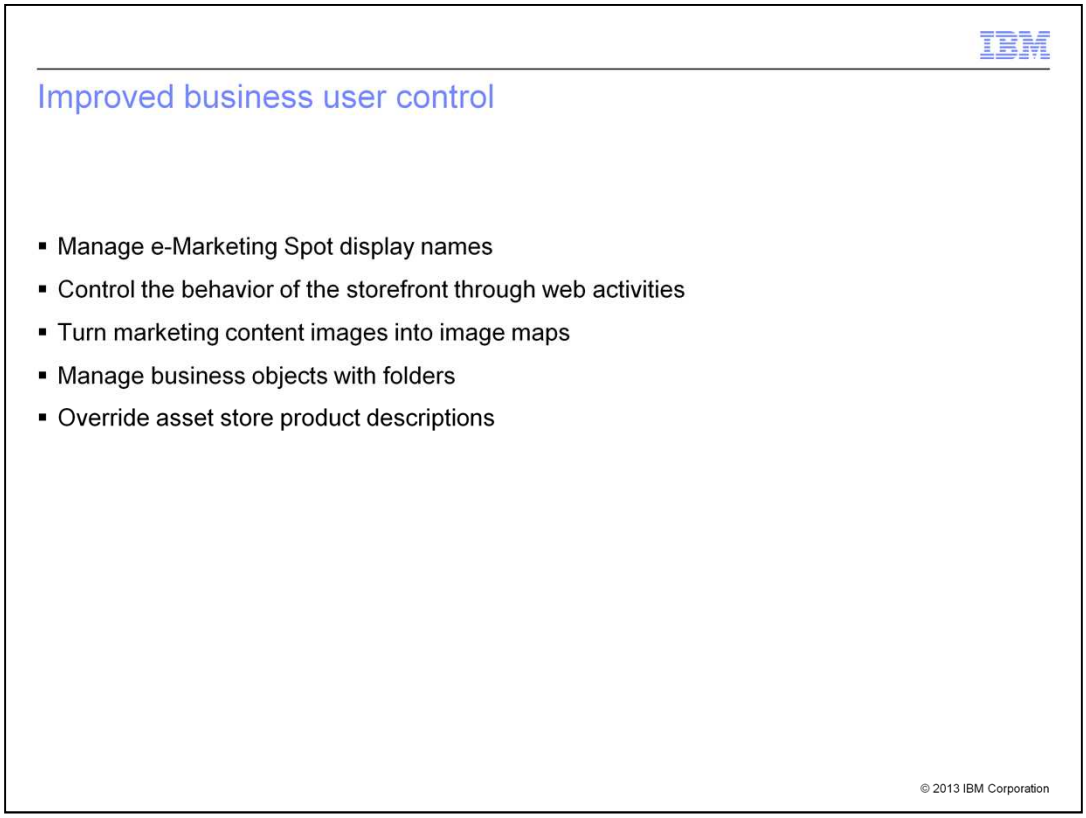


The updated filters are also available in search rules. Both the “Change Search Result Order” and “Add or Replace Search Criteria” search rule actions are updated to use the new filters. The inventory filter shows how you add a criteria to a search rule to ensure that all search results have at least 50 units in stock. This way, out of stock merchandise is not being included in the results.

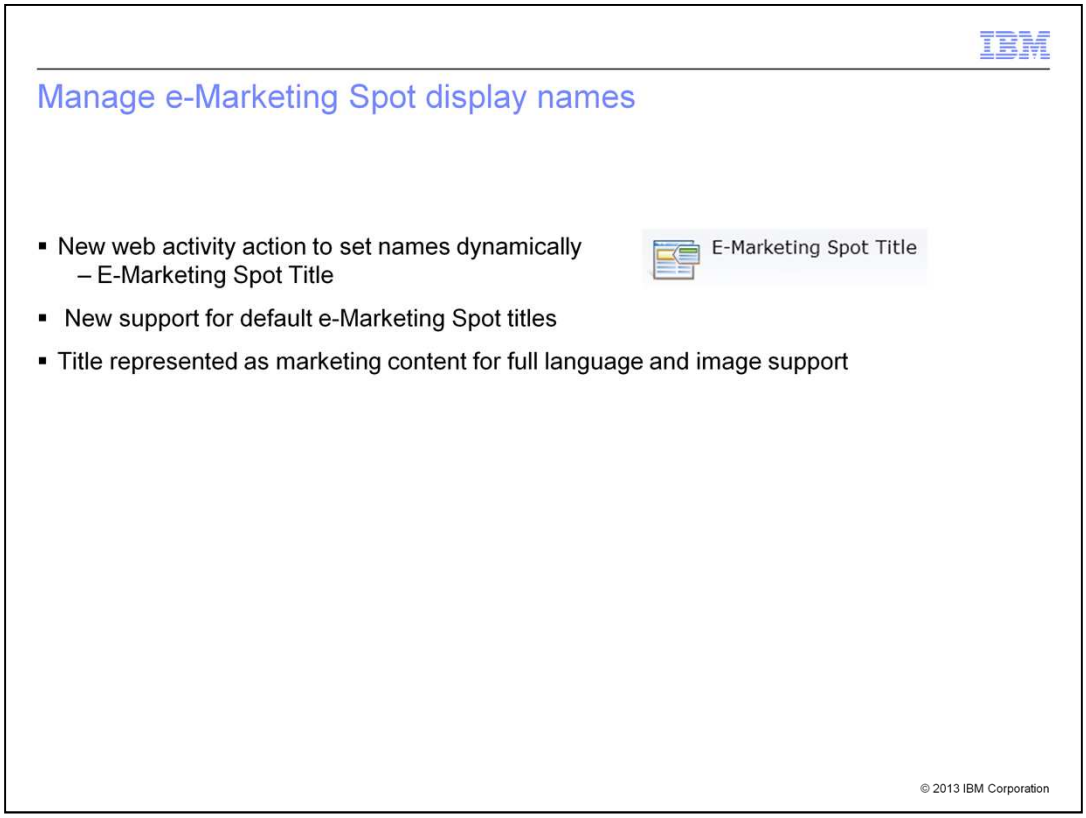


In Feature Pack 6, search rules also include the concept of a ranking action. For each criteria specified, business users can select whether that criteria should be used to promote matching products higher in the search results or demote them to lower in the results. The ranking factor determines how strongly the criteria affects the overall result ranking. In the example on the slide, products from the manufacturer Sharpson and those with a profit margin attribute set to ‘high’ are ranked higher in the search results than before the rule was applied. Products from the appliances category are ranked lower in the list. Applying ranking factors to your search rule criteria allows you to fine tune search results to help ensure the shopper finds what they are looking for.

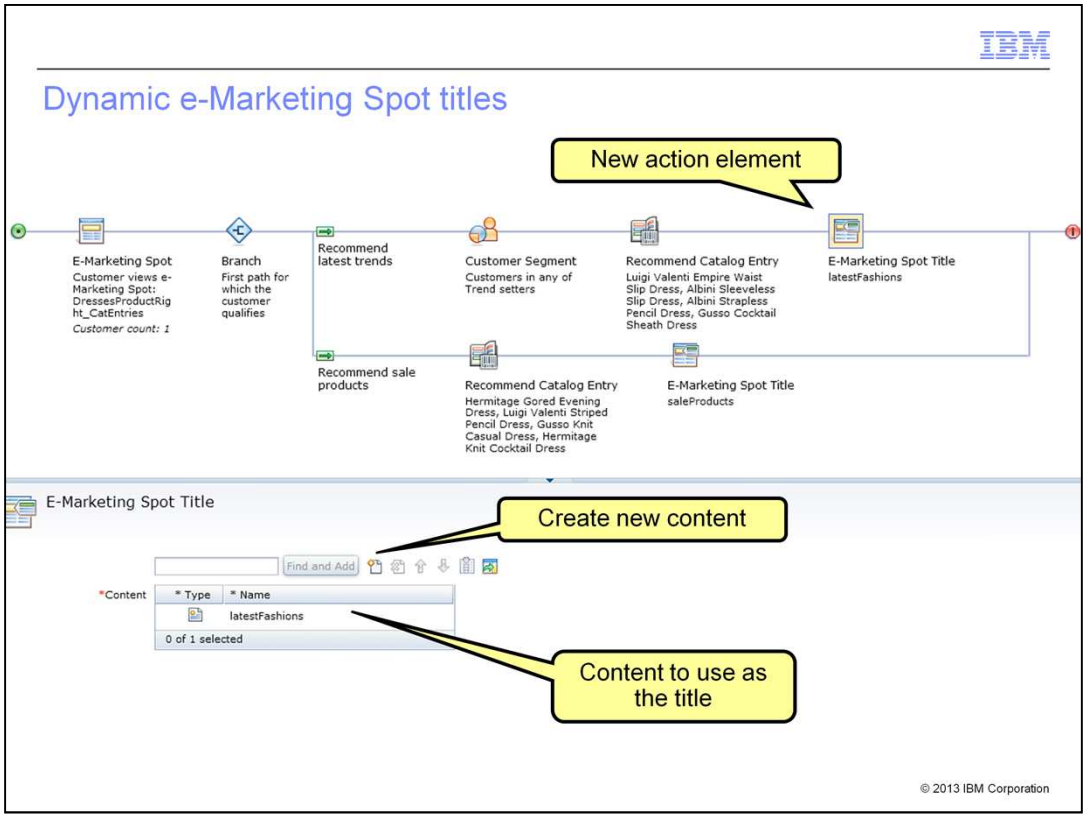
This section examines additional merchandising improvements.



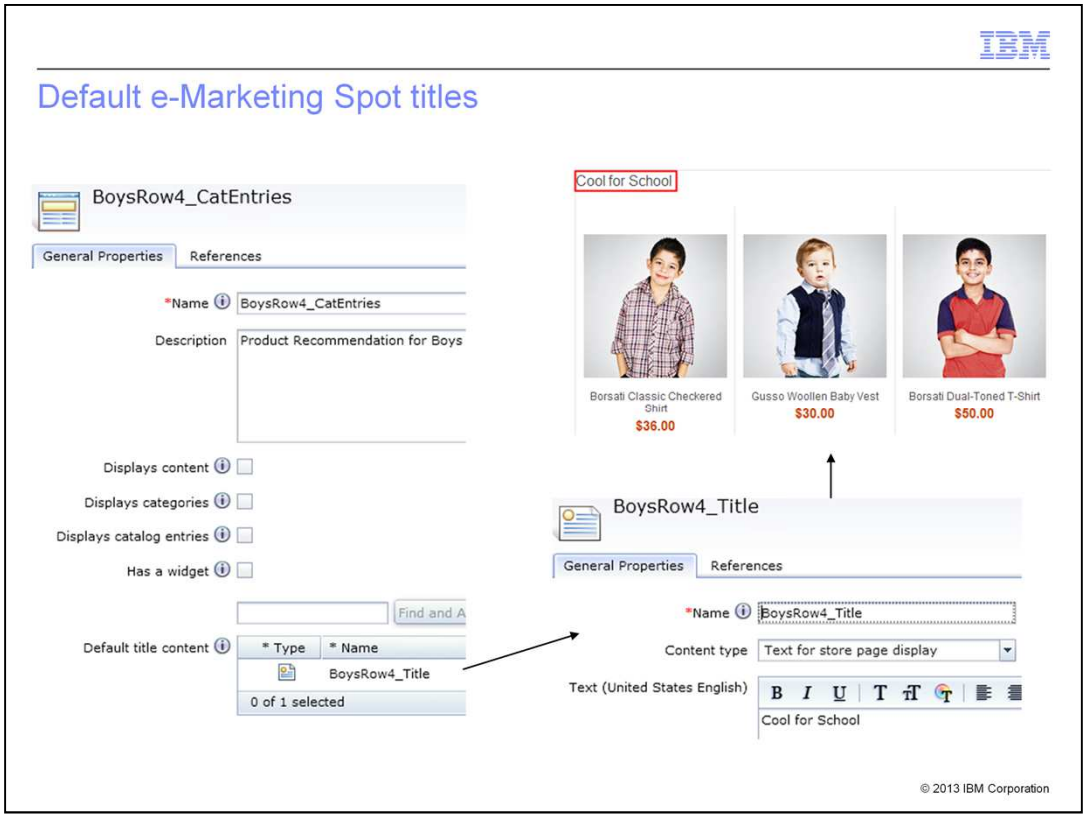
Feature Pack 6 includes several improvements to the merchandising and marketing capabilities in Management Center. Web activities have been extended to provide control over e-Marketing Spot titles and other storefront behavior. Marketing content can be easily turned into an image map. Folder support allows several common business objects to be more easily organized and managed. Override fields allow you to define extended site-specific descriptions for inherited asset store products.



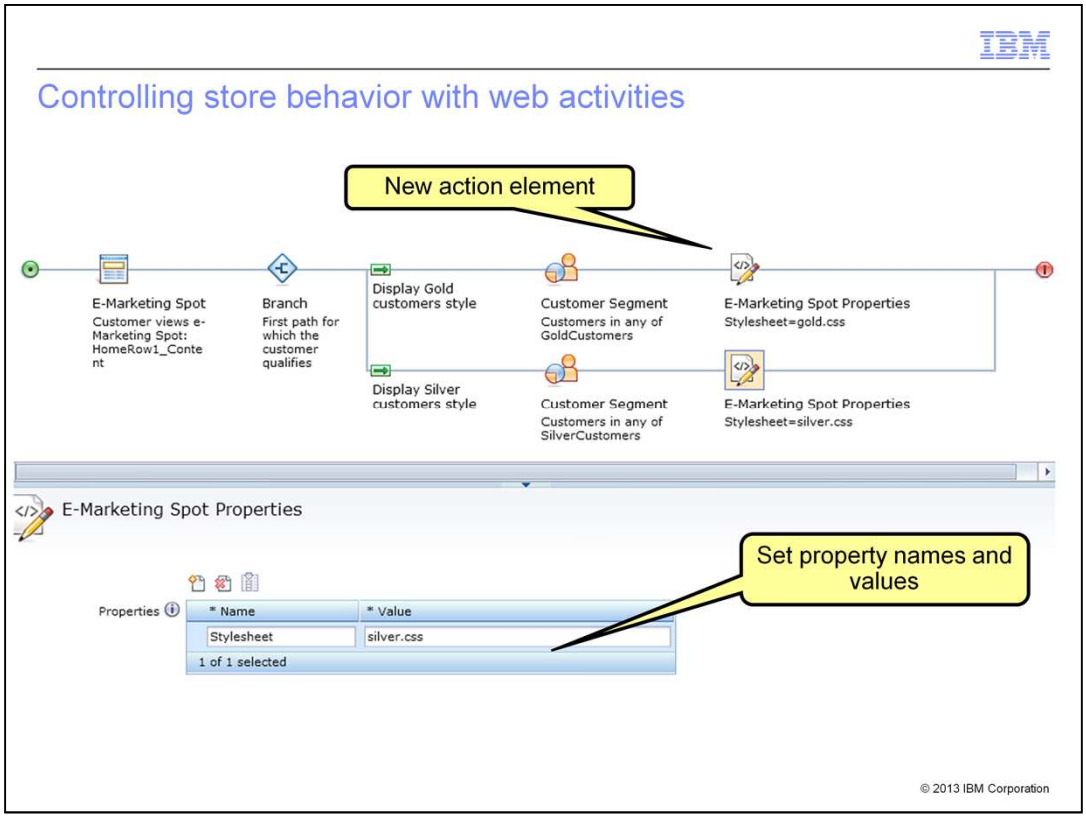
The ability to manage e-Marketing Spot display names gives business users further control over the storefront display. Feature Pack 6 adds support for setting e-Marketing Spot titles dynamically using a new web activity action. Default titles can also be set for each e-Marketing Spot defined for the store. E-Marketing Spot titles are represented as marketing content which means either text or images can be used. Marketing content also provides full language support.



E-Marketing Spot titles can be controlled dynamically using web activities. The new “E-Marketing Spot Title” action allows business users to select marketing content to represent the title for an e-Marketing Spot. In this way, web activities can be used to dynamically update the display title for an e-marketing Spot in the store. In the example on this slide, the first path uses the new action to set the e-Marketing Spot title to the latestFashions marketing content for shoppers in the trend setters segment. In the second path, the title is set to the saleProducts marketing content. If the content to be used for a title does not exist, the create new content button allows you to open the content property editor. Store developers and business users should plan for which types of marketing content will be used for e-Marketing Spot titles so that the store JSP displays the titles correctly.



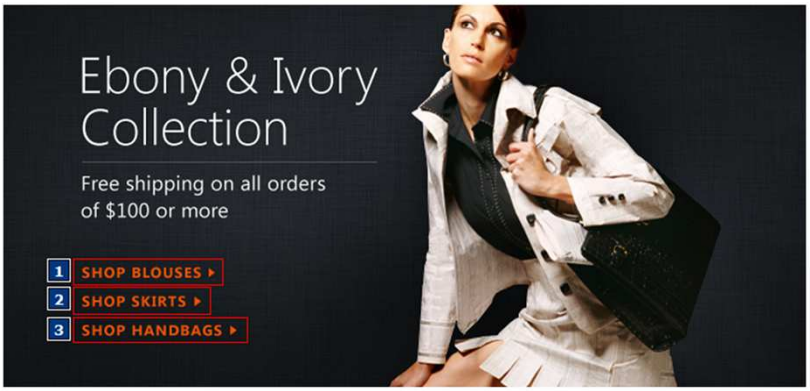
In addition to setting e-Marketing Spot titles dynamically, you can also provide default values for the title using the e-Marketing Spot property editor. In the example on the slide, marketing content containing the text “Cool for School” is set as the default title for the BoysRow4_CatEntries e-Marketing Spot.



Feature Pack 6 also gives business users the ability to pass additional information to the storefront to adjust the display of the store page. The new “E-Marketing Spot Properties” web activity action provides this capability. Business users and store developers must plan these properties in advance so the storefront can respond to the properties when they are received. In the example activity on the slide, a different style sheet name is passed to the storefront depending on whether the shopper is a member of either the gold or silver customer segment.

More flexible marketing content

- Add multiple click actions to a single image to create an image map
- Support for longer content names
- New substitution parameters simplify HTML content



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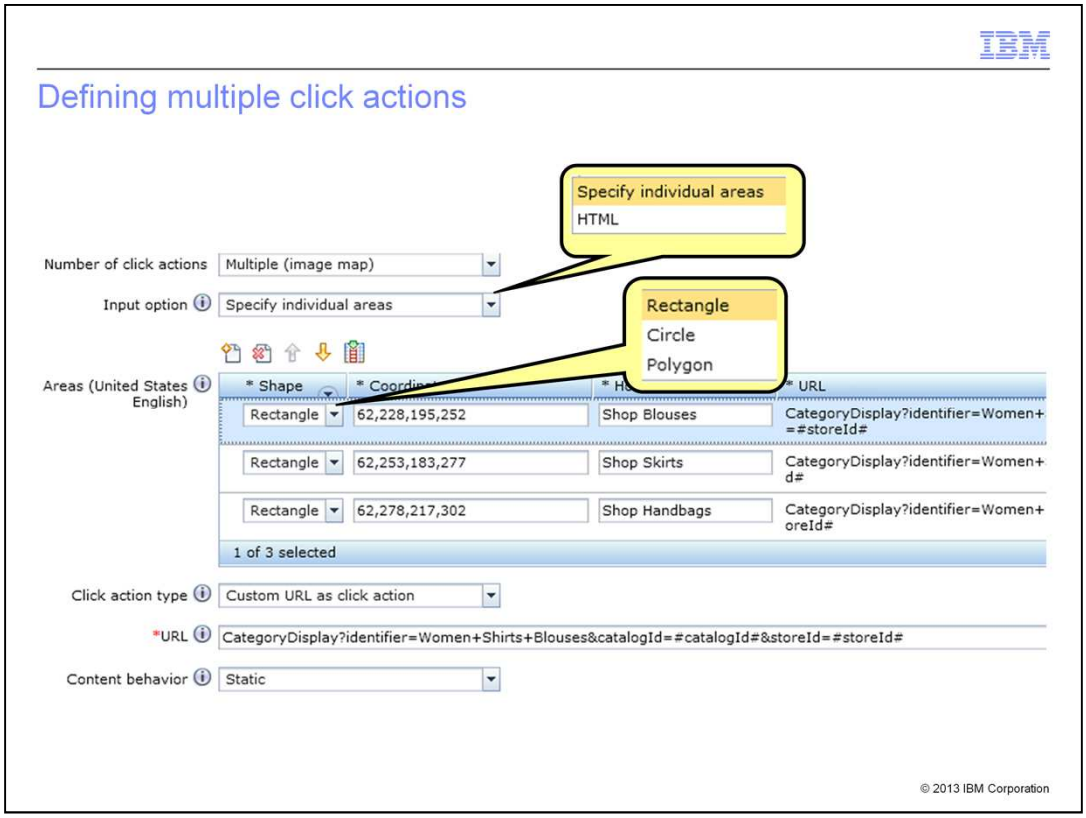
Several enhancements to marketing content are included in Feature Pack 6. Support for multiple click actions allows for the creation of image maps such as the example shown here. In this case, the three highlighted areas of the image link to three different category pages.

The name field for marketing content has been extended to 256 characters from 30 characters. This allows you to define more meaningful names for your content.

The third new feature is the introduction of substitution parameters for specifying links in HTML content. These parameters make it much easier to add links without needing to know store-specific data such as the full image path or store ID.



When creating marketing content, business users can now select the “multiple” option in the new “Number of click actions” dropdown. Choosing multiple click actions causes an editor for defining image map links to be displayed. Business users have the option of associating links with individual shapes within the image, as shown here, or providing an html definition of the image map, shown on the next slide. When using the shape editor, rectangles, circles and polygons can be defined by specifying coordinates. Each shape can have an associated click action. Predefined click actions and custom URLs are supported for image maps. Promotion click actions are not available.

Defining an image map in HTML

- Set map name to [contentId] substitution parameter
- Use URL substitution parameters to build click actions
- Required properties
  - shape, coords, href, title
- Optional properties
  - alt, target

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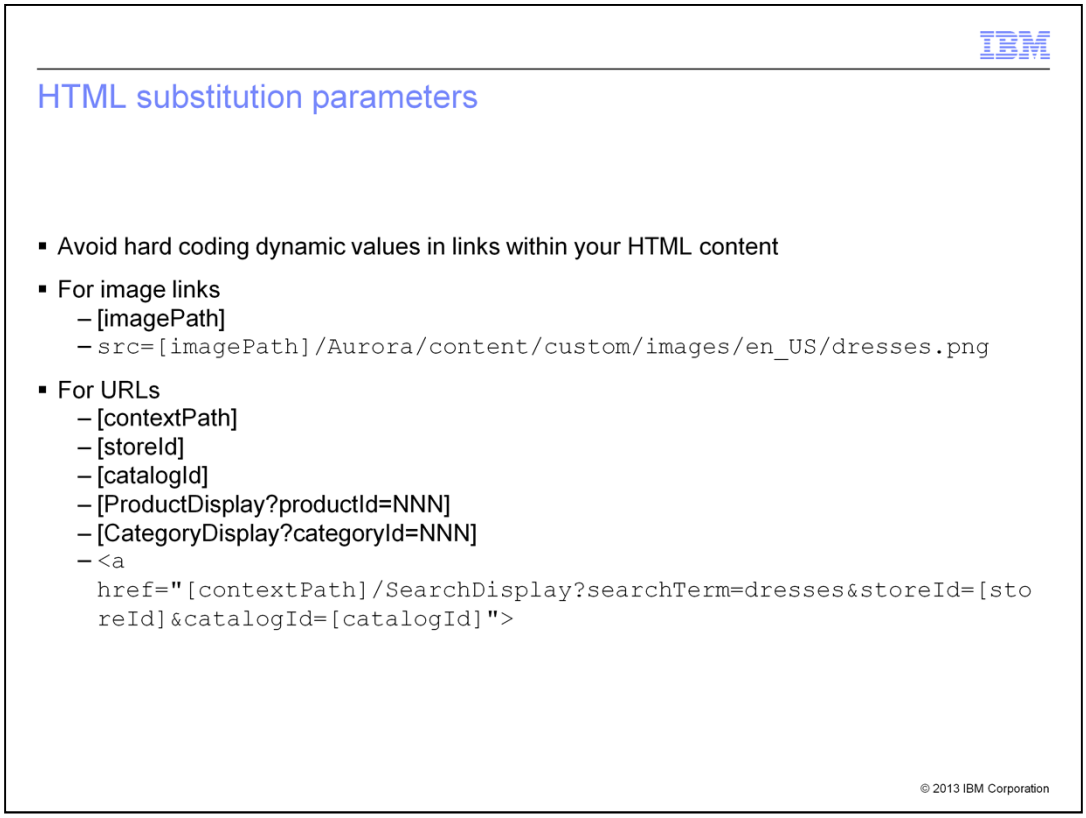
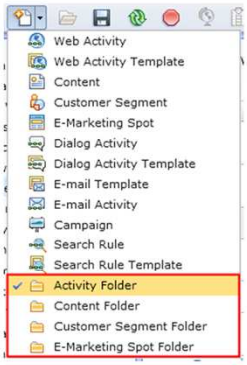
Image maps can also be defined using HTML. The contentId substitution parameter should be used in place of a map name. Click actions for the map must be defined within the HTML. You can use other substitution parameters to help build these links. The CategoryDisplay substitution parameter is shown in the example on the slide. A list of available parameters is shown on the next slide. You cannot switch back and forth between the shape editor and the HTML editor.

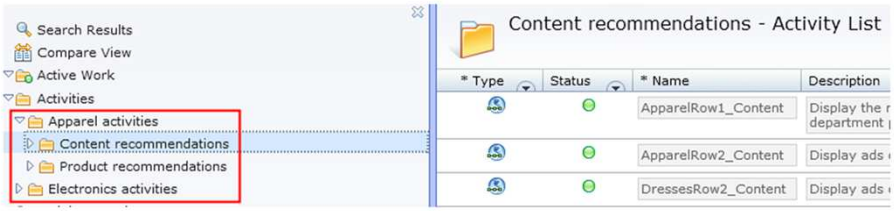


When adding HTML content for your custom content pages, you might want to include images or links to other pages in the store. Some substitution parameters are provided to simplify this process. Examples of the available substitution parameters are shown on the slide.

Enhanced business object management with folders

- Business users can create folders to organize and manage various business objects
  - Promotions
  - Attribute dictionary attributes
  - Marketing activities
  - Marketing content
  - Customer segments
  - E-Marketing Spots





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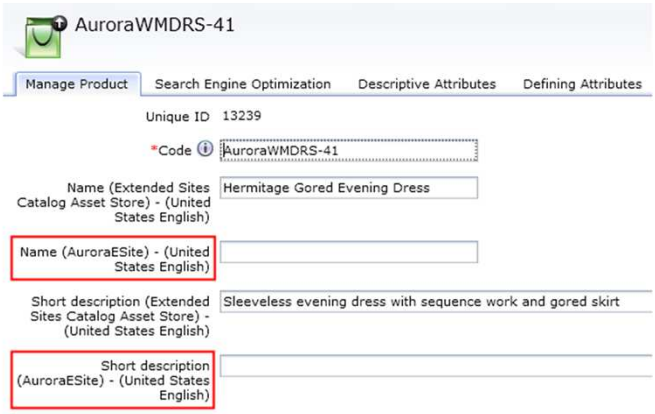
The concept of folders for organizing promotions was introduced in Feature Pack 5. In Feature Pack 6, the folder concept is expanded beyond the Promotions tool to also support marketing objects and attribute dictionary attributes. Business users can create a folder structure for each business object type listed on the slide. The folder structure exists in Management Center only and is shared across all business users working in a particular tool. Folders store a reference to each business object, not the object itself. This means that removing an object from a folder does not cause it to be deleted. The screen captures on the slide show the folders that can be created for different marketing objects and a sample structure for organizing web and dialog activities.

Extended site overrides

- UI support added in Management Center



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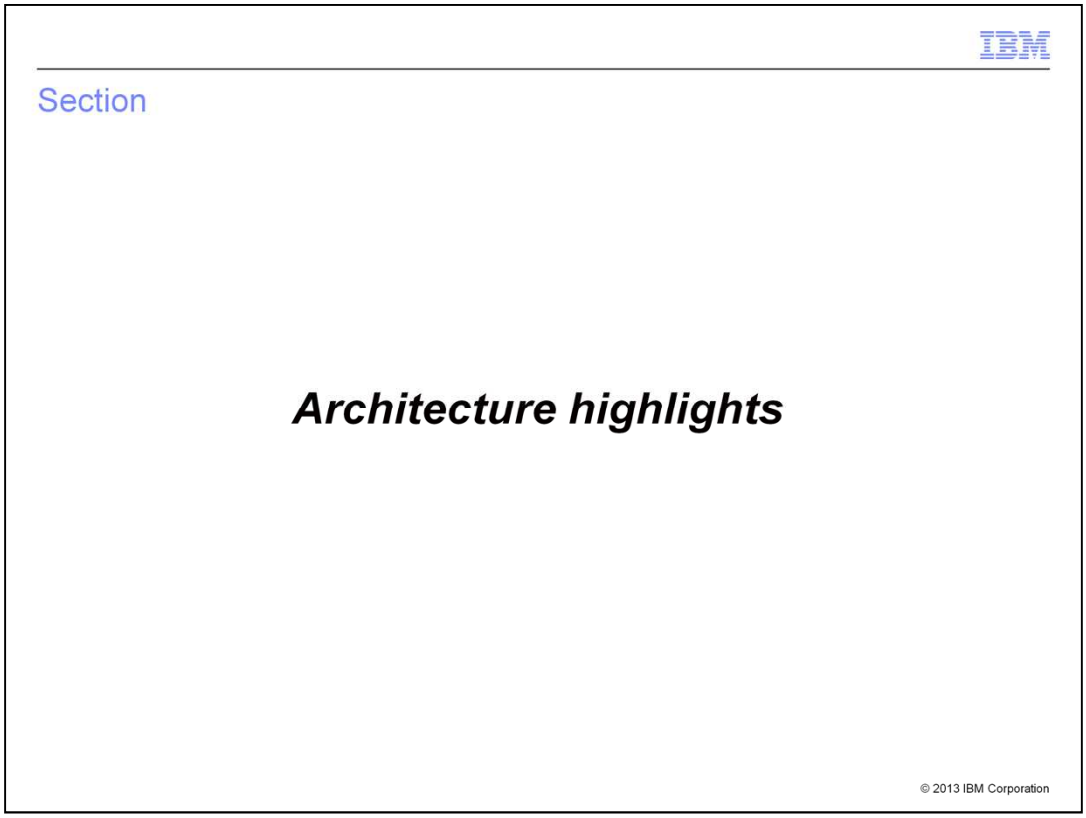
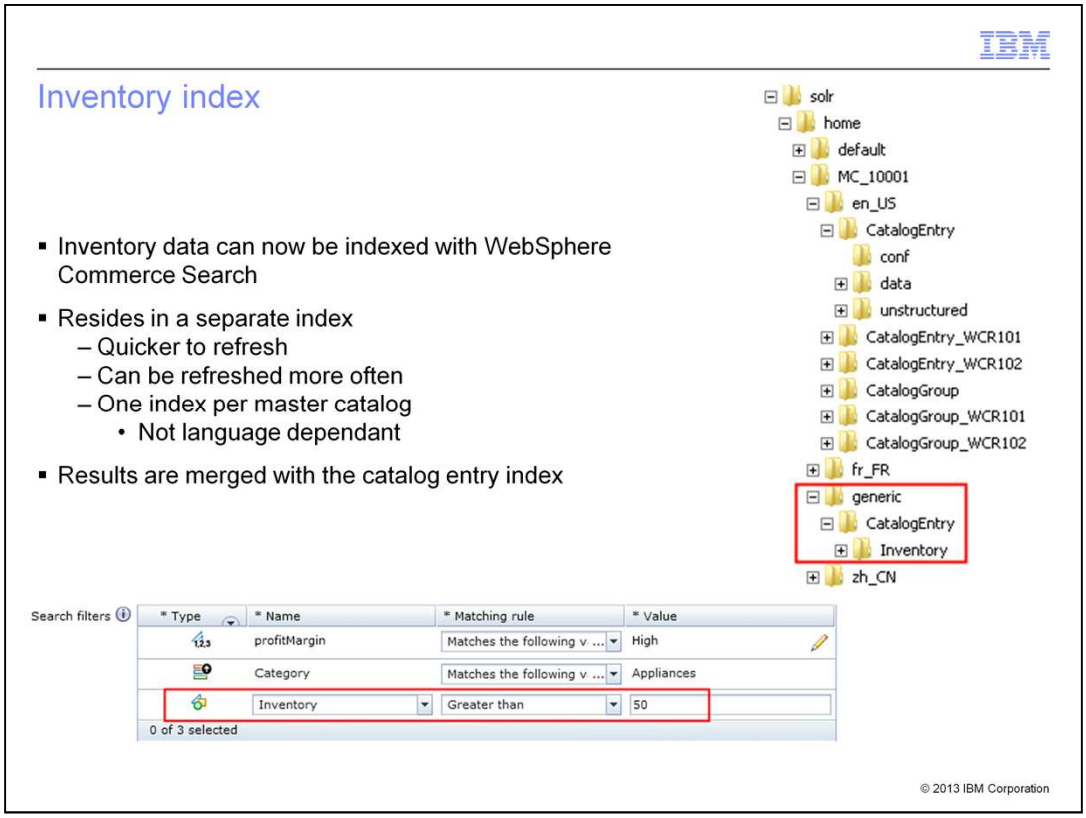
Extended site overrides allow extended sites to provide store-specific descriptive information for catalog entries that are owned by an asset store. In Feature Pack 5, support was added for loading override information through command line data load or catalog upload. Feature Pack 6 brings this override capability to the Management Center Catalogs tool.



This section covers the architecture highlights of the search enhancements.



Indexing inventory information makes it available to business users to include as an additional filter when creating dynamic merchandising rules. Inventory data is kept in a separate index so that its quicker and easier to refresh than the full catalog entry index. This means the index can be refreshed more often to keep up with changing inventory values. The location of the inventory index in relation to the catalog entry index is shown in the screen capture on the slide. Since inventory is not language dependent, only one index is required for each master catalog. The inventory index acts as an extension of the catalog entry index. When search queries are evaluated, the index data is combined with the main catalog entry index results. This new index supports some of the business user capabilities seen earlier in this presentation such as creating search filters to limit search results to in-stock products.

Indexing inventory data

- Inventory index follows the existing index building process
- Data comes from
  - INVENTORY table (for non-ATP inventory)
  - Direct load of preprocessor table (for external source inventory)
- Index contains data for each fulfillment center
- Item inventory counts are summed to create product inventory total

#	Score	Doc. Id	catentry_id	inv_strlocqty_10152_10039	inv_strlocqty_10152_OnlineStore
0	5.9704	2626	12625	200.0	202.0
1	5.9704	2633	12632	200.0	202.0
2	5.9704	2640	12639	200.0	202.0
3	5.9704	3115	13114	200.0	202.0

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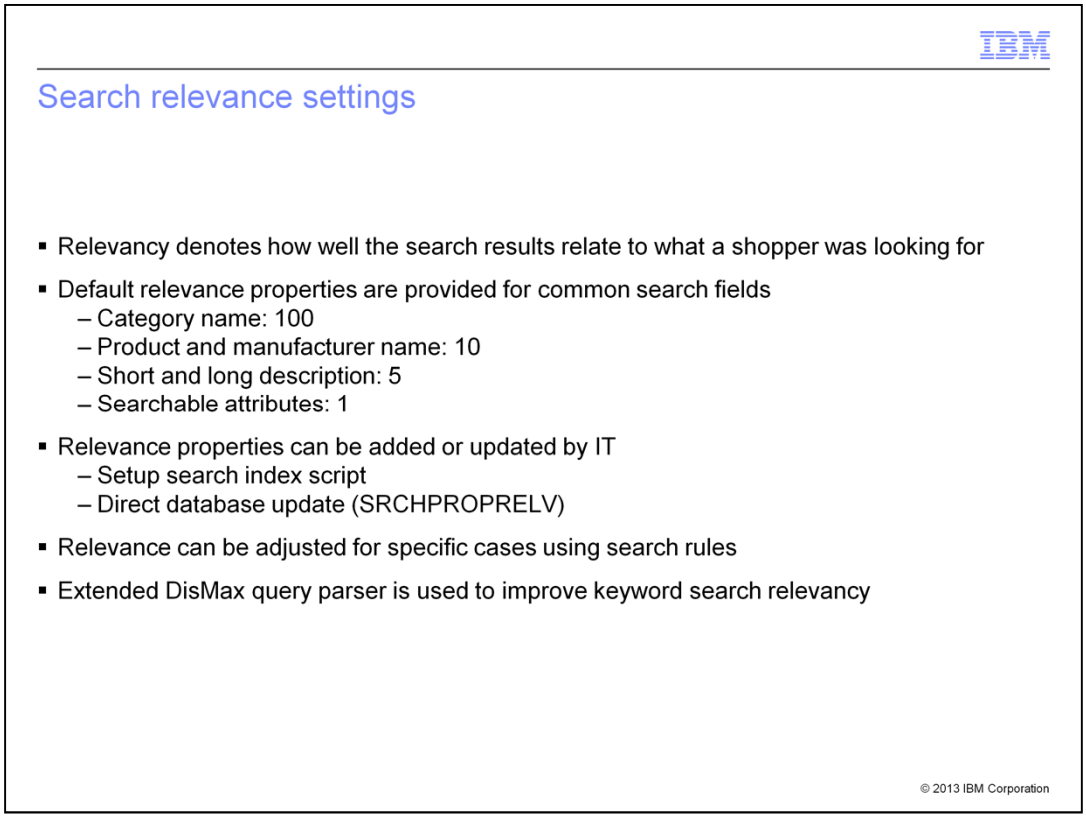
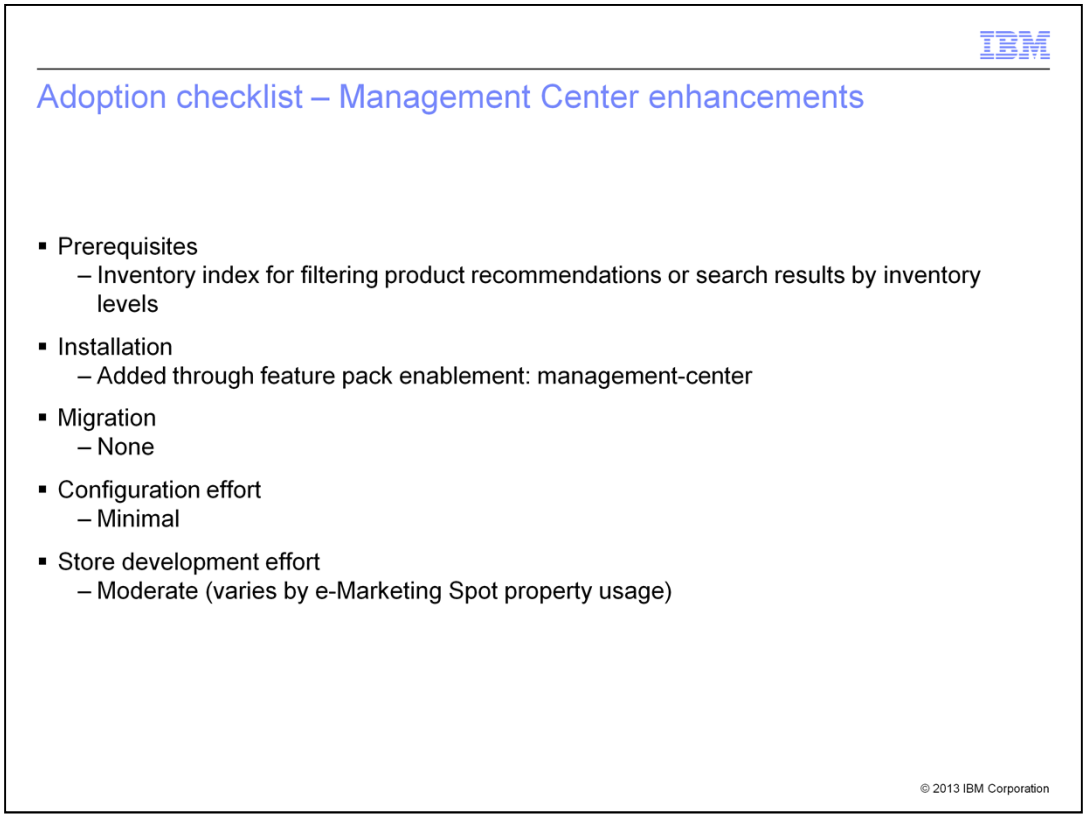
Creating and populating the inventory index follows the existing process. The data is preprocessed and the index is built using the same utilities as the other search indexes. The default configuration is to index non-ATP inventory information stored in the INVENTORY table. If inventory comes from an external source, such as with a DOM integration, it is possible to load data directly into the preprocessor table and use that to build the index. The index contains data for each fulfillment center used by the store. Since inventory data is maintained at the SKU level and search results are at the product level, inventory counts for each SKU are summed to produce the product inventory total. The screen capture on the slide shows sample inventory index data as seen using the Lucene Index Tool.

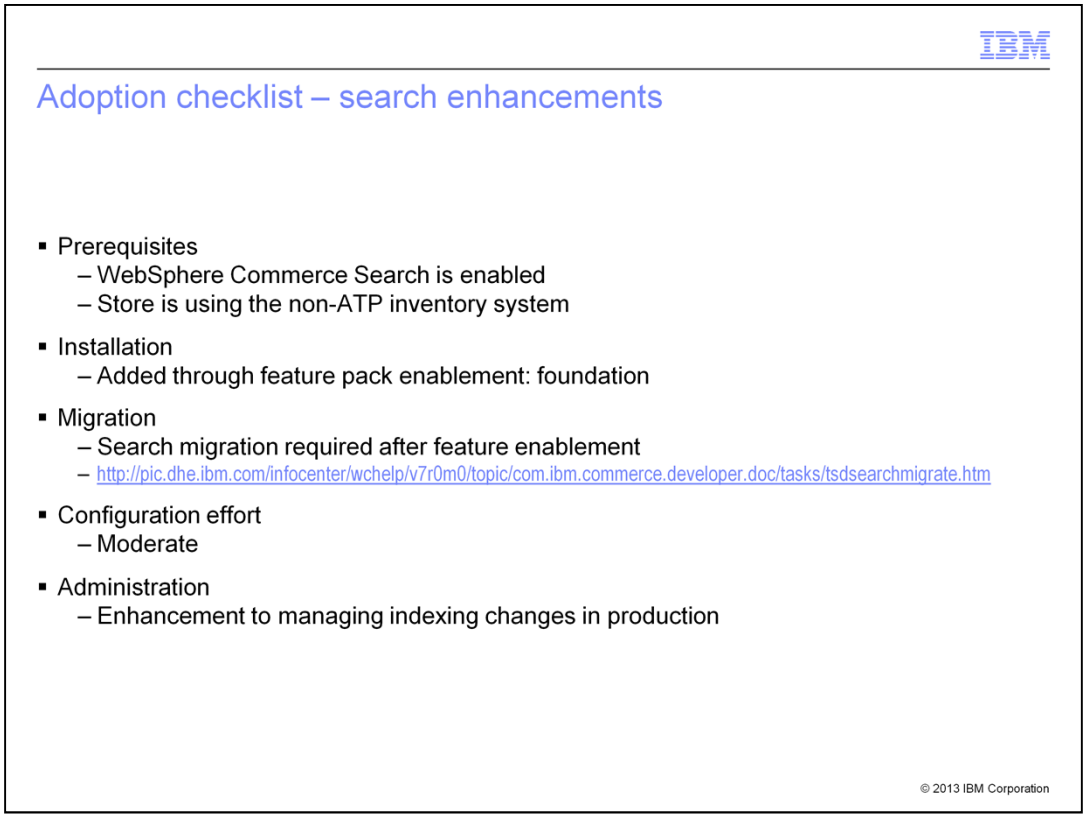


Search relevance settings allow you to specify which fields in your index should be the most important in calculating the search results. Default values are provided for the common search fields and these values do not need to be changed unless they need to be optimized for your store. Updating the default relevance settings is an IT task. The values are initially populated when the setup search index script is run and can be updated directly in the database. To adjust the relevance of a search field in specific instances, the boost factor in search rules can be used. For example, setting a boost factor for a particular attribute value increases that attribute's relevance in the search results. In Feature Pack 6, the Extended DisMax query parser is used by default to improve keyword search relevancy. The Lucene parser is still used for search-based navigation in the storefront.

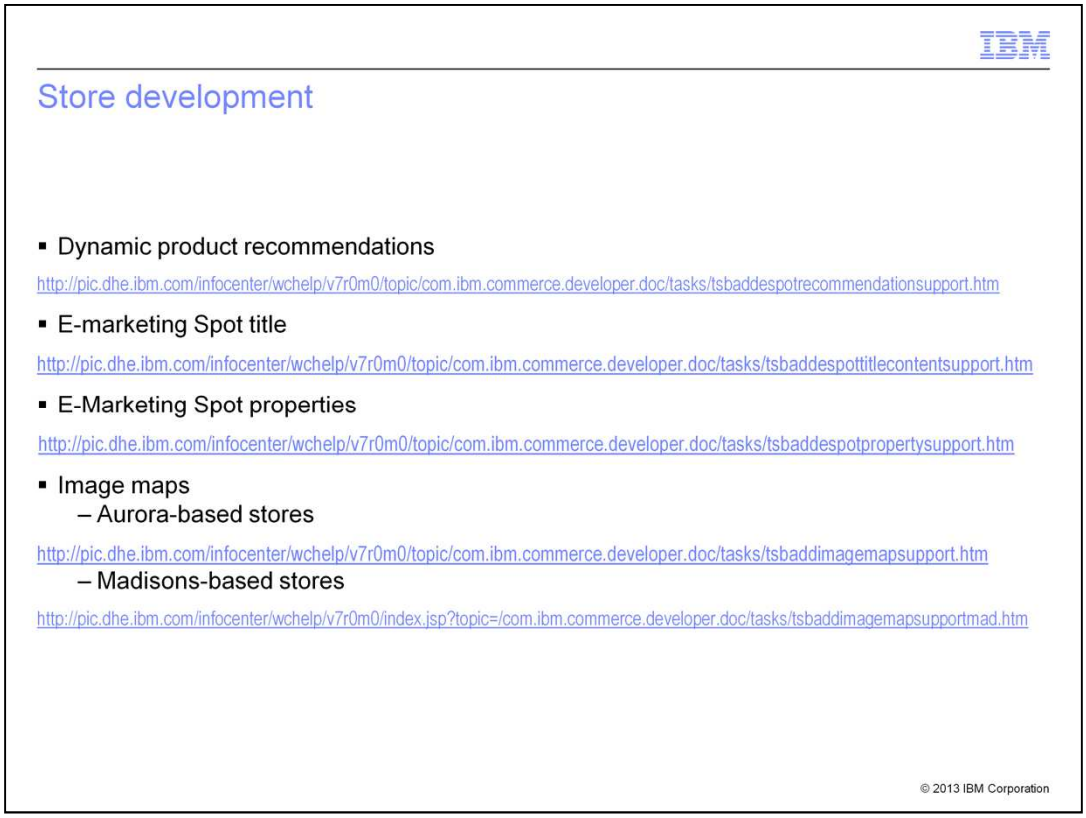
This section summarizes the steps needed to adopt the new merchandising and search features into an existing environment.



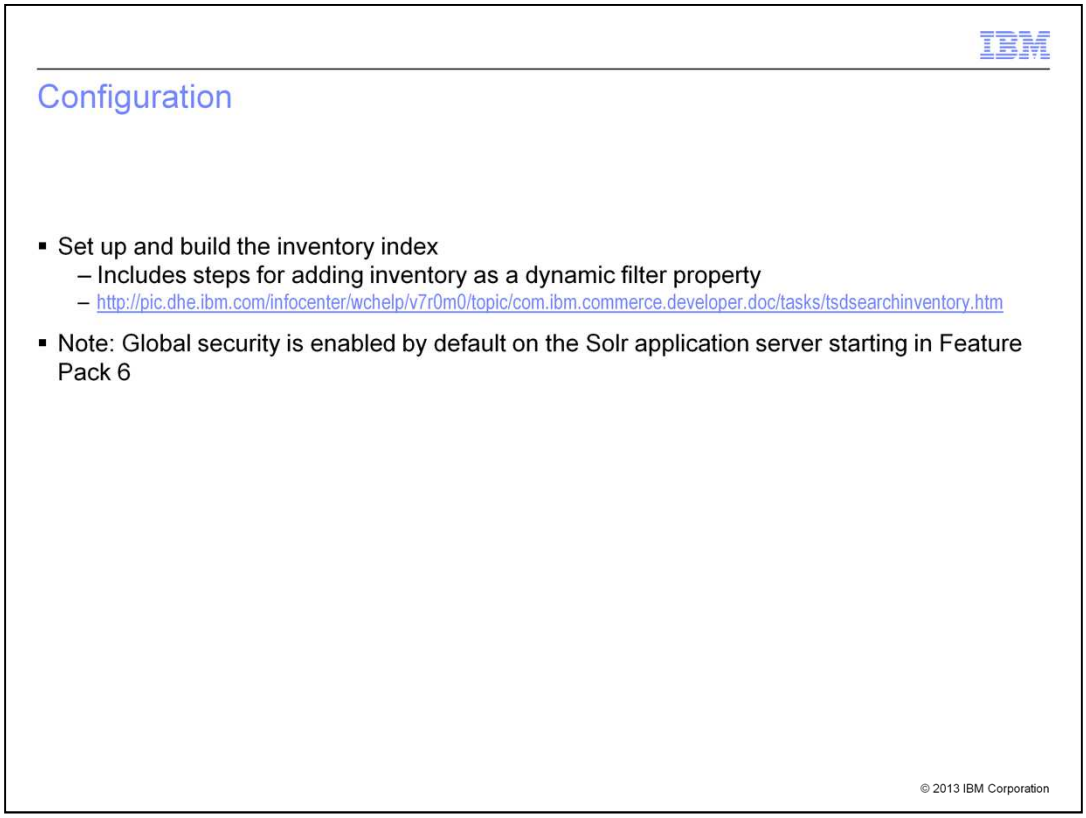
Adopting the Management Center merchandising and marketing enhancements into your existing solution requires minimal to moderate effort depending on the features you want to use. When installing Feature Pack 6, all new capabilities are enabled through the management-center component with the exception of the inventory search filter. This requires the inventory index be set up first and then a configuration step is needed to add inventory to the list of dynamic filter properties. Some new features require store development effort. These include: e-Marketing Spot titles and properties, image maps and dynamic product recommendations. The complexity of the store development effort mainly depends on how many e-Marketing Spot properties you choose to support in the store and what their impact is within the store.



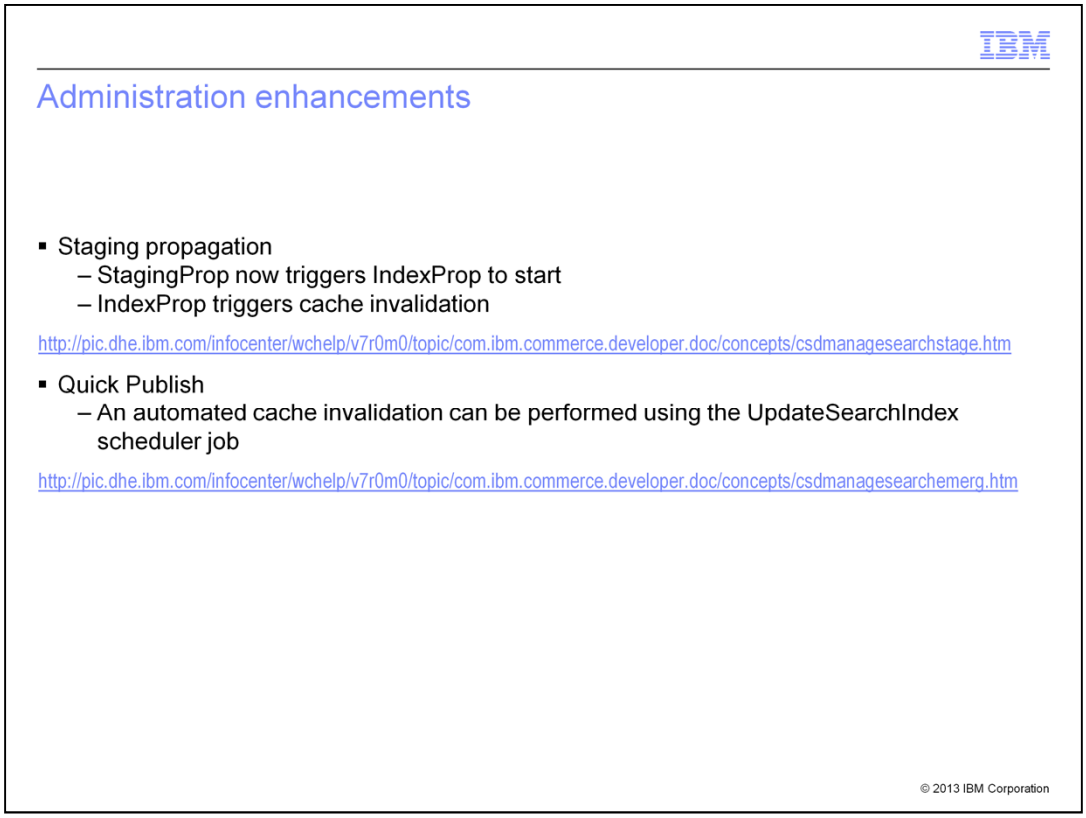
Adopting the latest search enhancements into your existing solution requires that WebSphere Commerce Search be enabled. To take advantage of the inventory index, your store needs to be using the non-ATP inventory system. Everything you need to configure the latest search features is added to your system during foundation feature enablement. After running feature enablement, you need to complete the search migration process outlined in the Information Center. A moderate configuration effort is required to set up the inventory index. More information on this process is included on an upcoming slide.



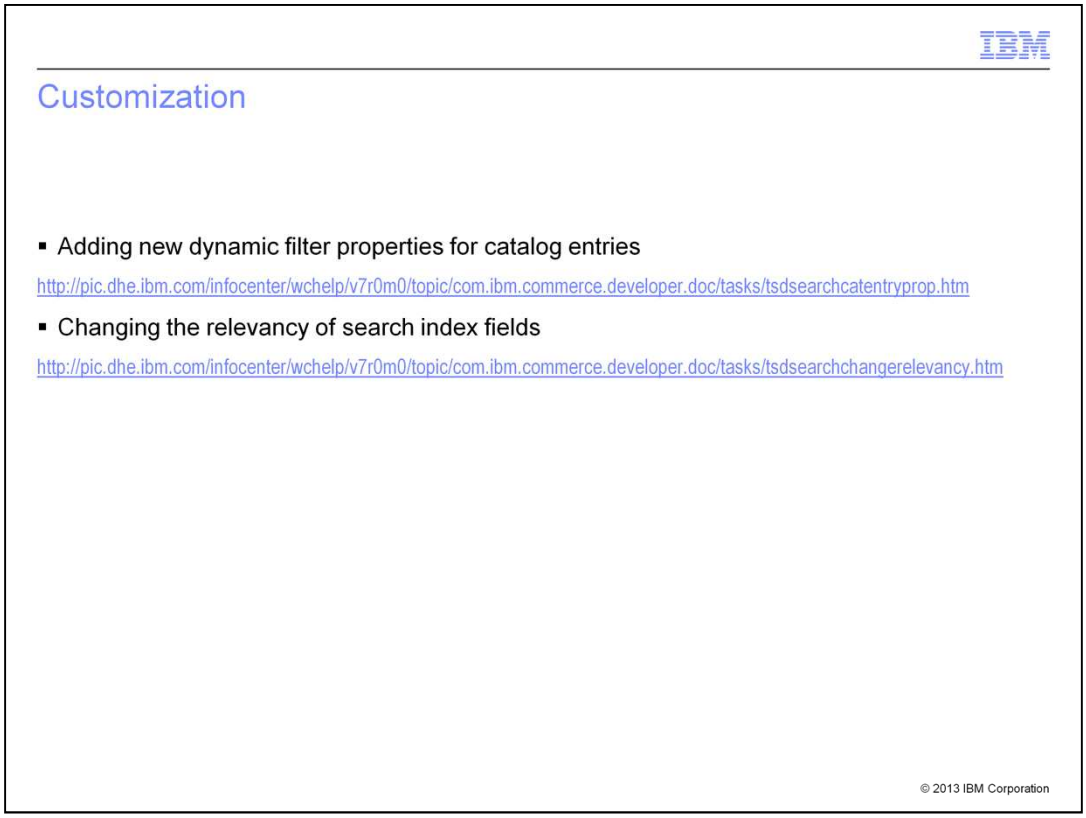
A number of the features discussed in this presentation require additional data from or return new data to the storefront. You can see all of these features demonstrated in the Feature Pack 6 Aurora store except for e-Marketing Spot properties. This slide summarizes the changes needed to your store pages to adopt the new features.



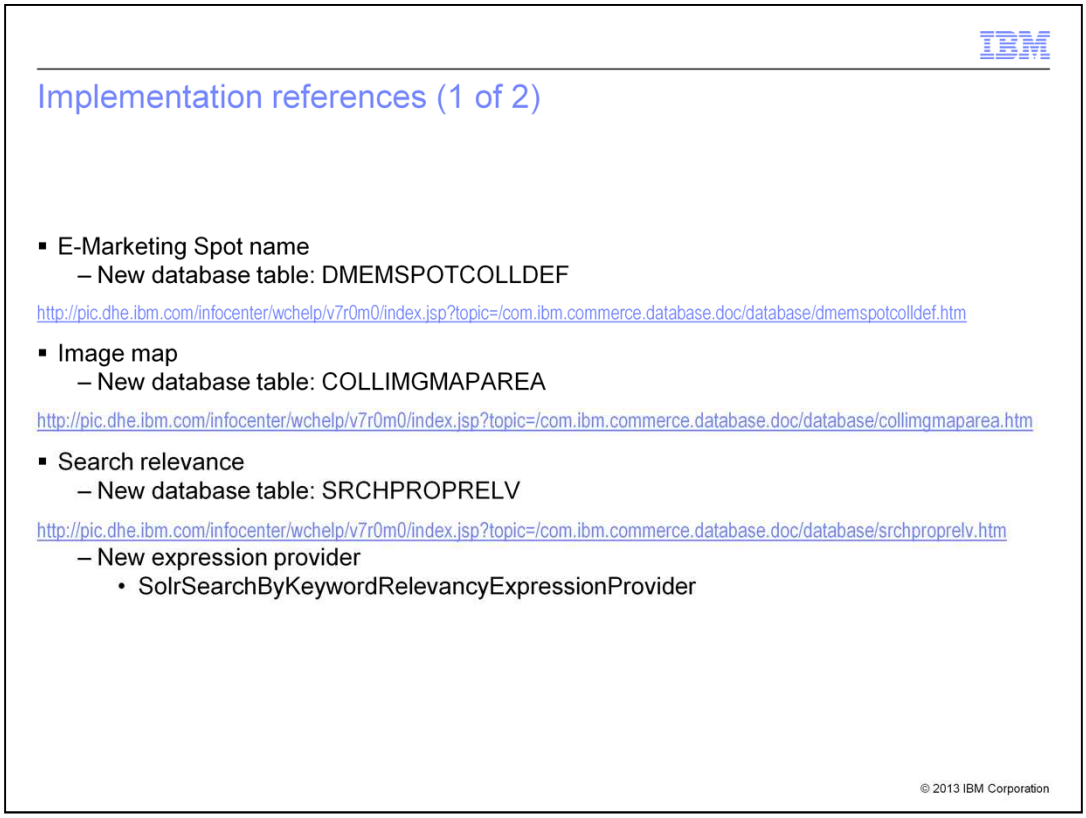
This slide provides a reference link for the steps needed to configure an inventory index. This information includes creating and populating the index. It also includes the configuration necessary to add inventory as a dynamic filter property for product recommendations and search rules in the Management Center UI.



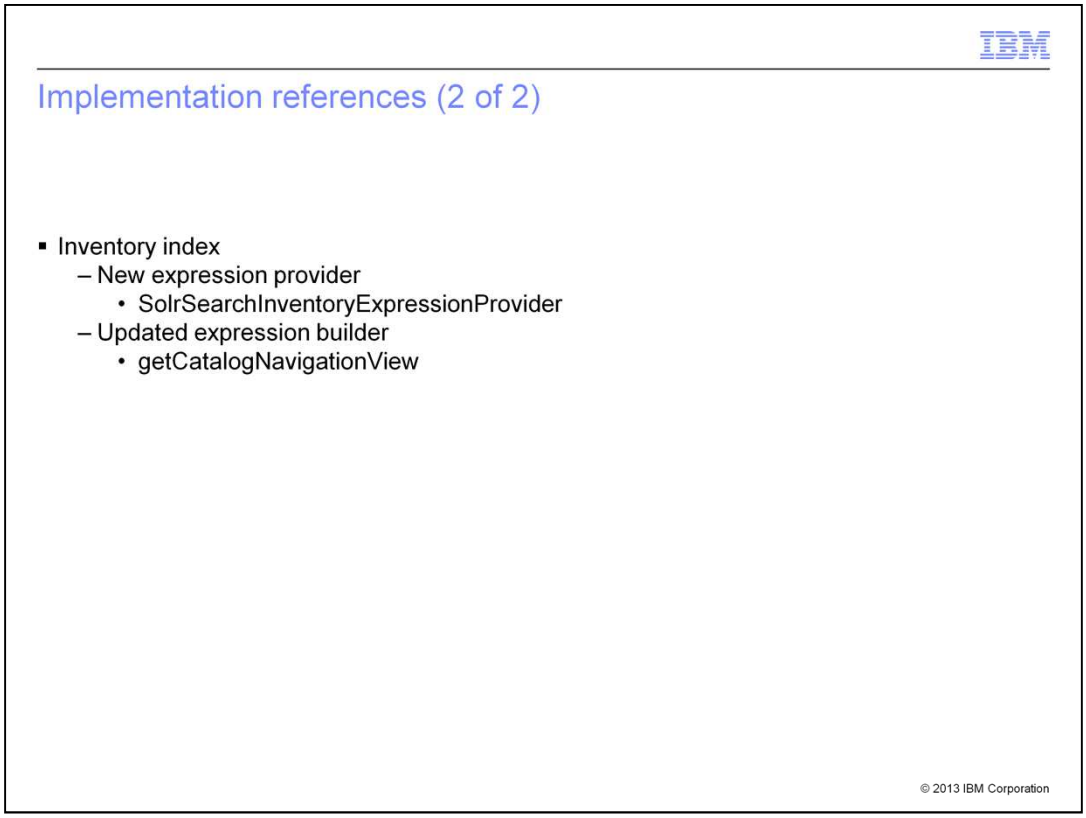
Feature Pack 6 includes some enhancements to managing indexing changes in production. It is now easier to coordinate the timing of staging propagation, index propagation and cache invalidation. Each step in the process can trigger the next step to begin. Improvements have been made for both standard staging propagation and emergency fixes made using Quick Publish. This slide contains links to Information Center articles on the details of these changes and the overall timeline of events.



Two customization scenarios are supported for dynamic merchandising and search. The first scenario describes a simplified process for adding new catalog entry properties to the search filter list for dynamic product recommendations and search rules. The second scenario describes how to change the default relevancy settings for search index fields. Details on the customization process can be found in the Information Center.



This slide provides reference links to the new database tables added to support e-Marketing Spot names, image maps and search relevance properties. There is also a new expression provider added to include the relevance properties in the search query.



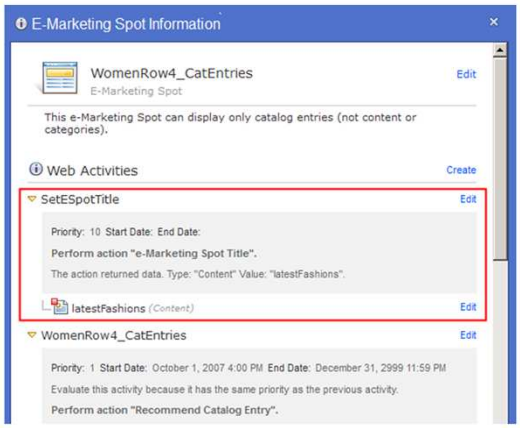
The inventory index also introduces a new expression provider. The getCatalogNavigationView expression builder is updated to accept an inventory parameter.

This slide summarizes the trace strings for the WebSphere Commerce search solution. There are no new trace strings in Feature Pack 6. The marketing component provides the trace statements for all the new marketing and merchandising features. The Solr trace strings are provided here for reference.

This section summarizes some troubleshooting tips for the new merchandising and search features.

E-Marketing Spot titles

- If setting titles in a separate activity, ensure the priority is high enough that the activity is evaluated
- Check which title content is being returned using store preview



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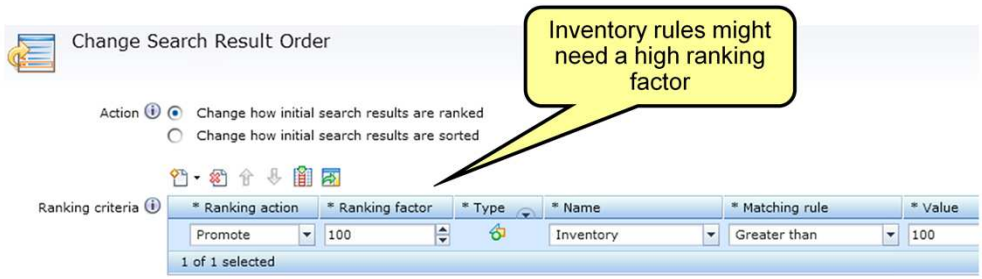
All web activities are evaluated based on their assigned priority. When you create a web activity to set an e-Marketing Spot title, you need to ensure that the priority for that activity is set to a high enough value that the activity is evaluated. If you see an unexpected title for an e-Marketing Spot, you can use the e-Marketing Spot Information pop up in store preview to check which title content is being returned.

Ranking factors in search rules

- The impact of ranking factors in the store depends on your catalog data
  - Ranking factors are applied in addition to the search field relevancy scores
  - If a ranking criteria does not change the search results as expected, a higher ranking factor might be needed
  - For example: A high ranking factor might be needed for an inventory rule to impact search results with a strong category match
- You can use store preview to see the calculated relevancy score of search results



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Ranking factors in search rules need to be tested and adjusted for your catalog data. The impact of the ranking criteria you set using search rules is going to vary depending on how strong the search result matches are before the ranking criteria is applied. If a ranking criteria does not change the search results in the way you expect, you might need to set a higher (or lower) ranking factor. For example, consider a set of search results with a strong relevance score, such as those with a category name match. If you want to adjust the ranking of those highly relevant results based on their inventory value, the ranking factor of the inventory rule will need to be quite high. You can use store preview to see the relevancy score that is calculated for each search result.

Inventory filter in Management Center

- Creating and populating the inventory index does not automatically add the Inventory filter in Management Center
- Ensure these database tables have been updated
  - SRCHATTR
  - SRCHATTRPROP
  - SRCHATTRDESC
- Setup details

http://pic.dhe.ibm.com/infocenter/wchelp/v7r0m0/topic/com.ibm.commerce.developer.doc/tasks/tsdsearchinventory.htm

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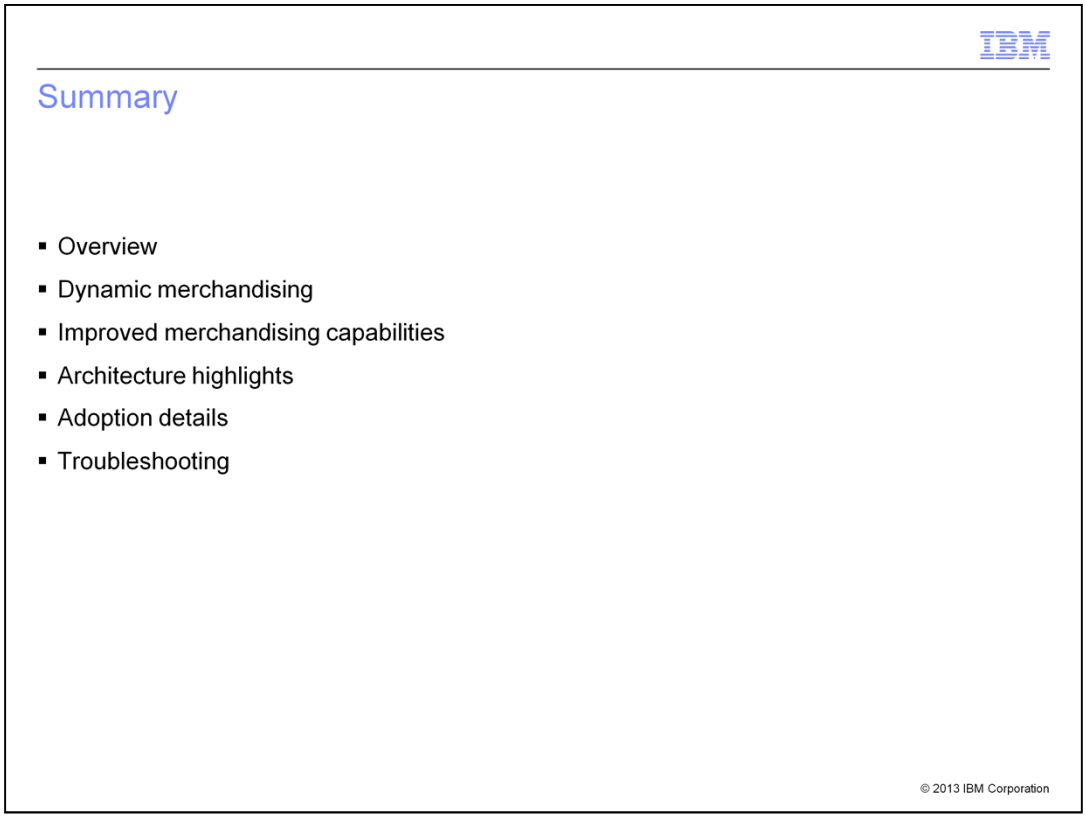
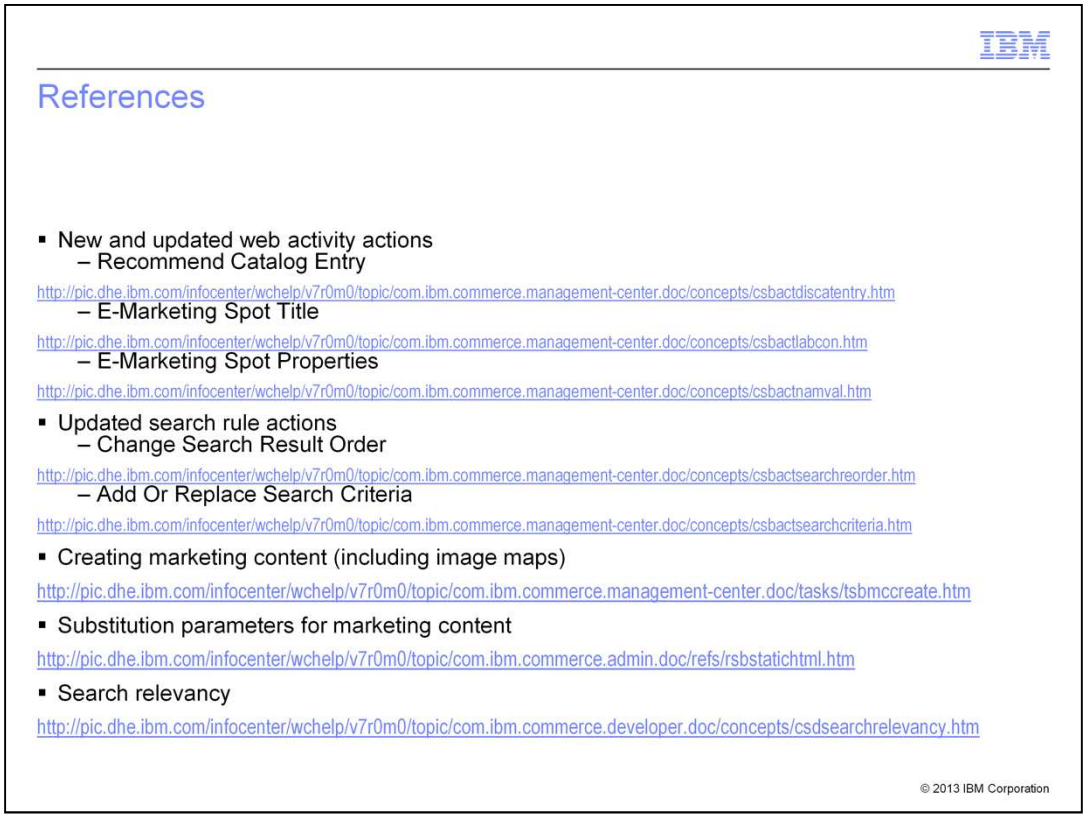
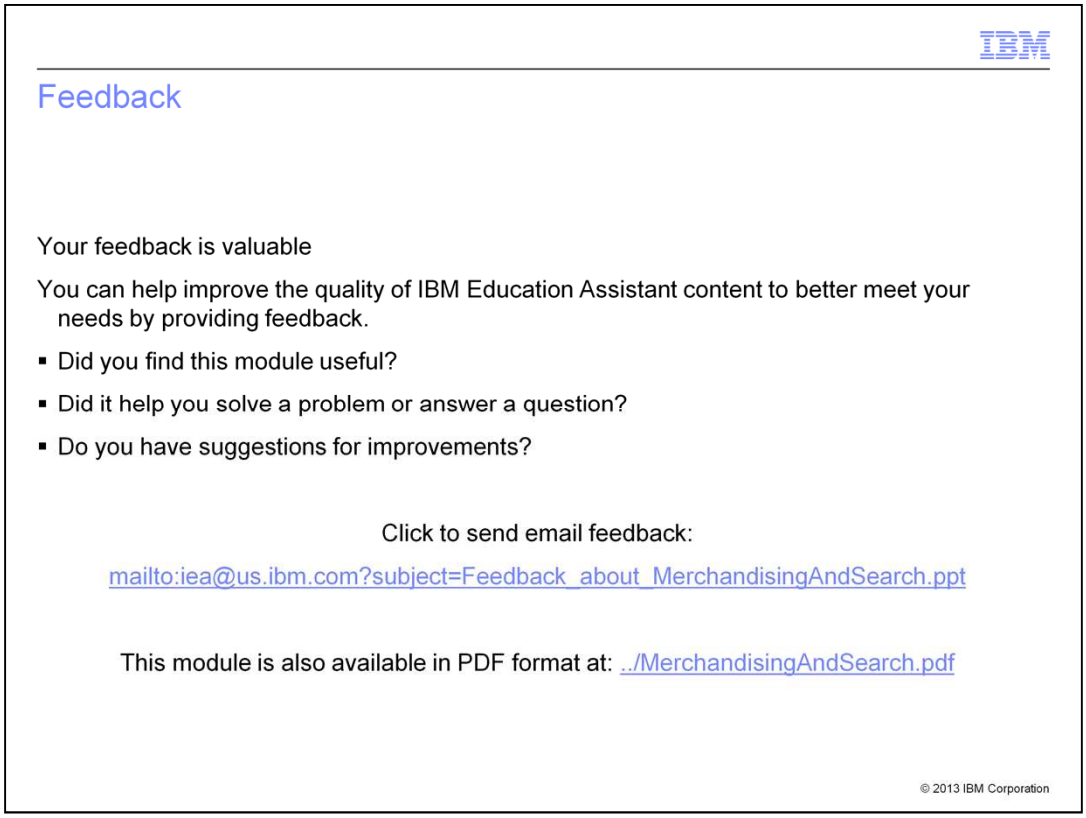
Some configuration steps are needed in order for business users to see the inventory option in the search filter list in Management Center. The inventory index must be created and populated and it is also necessary to update the search attribute database tables to add the filter. These steps are outlined in the Information Center article included on this slide.



This presentation began with a short overview of the merchandising and search improvements in Feature Pack 6. Next, the dynamic merchandising features and improved merchandising capabilities were discussed in more detail. Following the feature summaries were the architecture highlights for the search enhancements. The presentation concluded with some tips for adopting these new features and troubleshooting.



This slide contains some useful references for working with the merchandising and search features.



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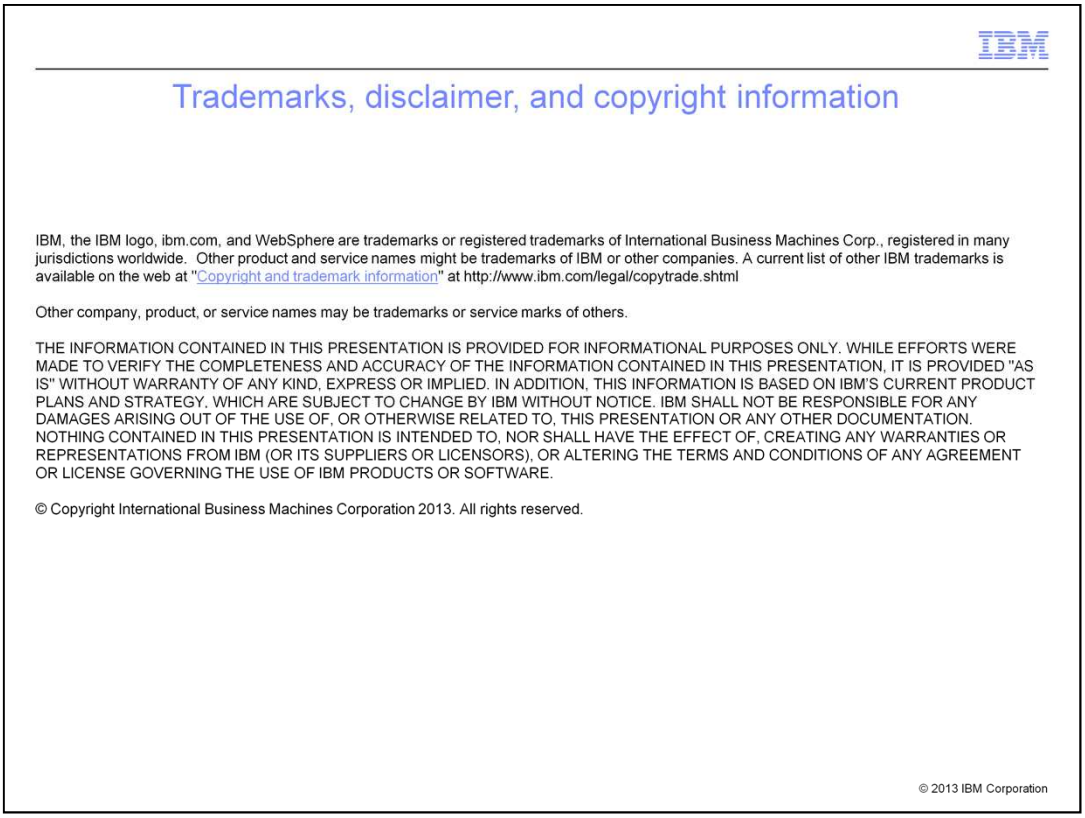
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