# xpedx.com Next generation

# *Catalog Design Document*

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This chart tracks the changes introduced by the revisions to the document as the project progresses through the stages of the System Development Life Cycle (SDLC).

| Version | **Date** | **Description (Changes Made)** | **Author(s)** |
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| 1.4 | 07/27/2010 | Templates for B2B view added | Sterling |
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Related or Reference Documents

| Document Name | Description | Owner | Location |
| --- | --- | --- | --- |
| SCI\_Xpedx Solution Definition Document v1.5 | Solution Definition document | Sterling Commerce |  |
| ItemMasterMappingv1.0.xlsx | Item Master Field Mapping | Sterling Commerce/xpedx |  |
| xpedxCatalogMandatoryInputsv1.0.xslx | Sterling Catalog Load Interface document | Sterling Commerce/xpedx |  |
| xpedx\_Catalog\_Wireframes\_5\_14\_10\_V6\_sent\_to\_xpedx.pdf | Catalog wireframes | Sterling/xpedx/IW |  |
| xpedx Replacements Detail Design Doc V1 4.doc | Item Replacement DDD | Sterling |  |
| xcom NG Connectivity Finalized Transactions.vsd | Connectivity Diagram | Sterling / xpedx |  |
| xpedxOntologyProductTypeB2BColumnsv1.0.xls | Product Type to Column View Mapping | Sterling / xpedx |  |

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# Introduction

## Document Purpose

This document is the governing functional design document for the Catalog functionality. It presents significant decisions and constructs used in developing the functionality. Testing, builds, configuration management are not covered in this document.

The document will also serve the purpose of keeping a list of assumptions that were made during design discussions.

## Document Audience

This document is intended for management and technical staff working on this project, xpedx IT and Business, webMethods, Legacy(MAX and ACCESS), HP, IW, xpedx/IP Network Team. Sterling will use the document during design and configuration for design consideration.

# Catalog

## Functions & Solution

The Catalog contains all the items that xpedx would like to sell using the Sterling system. It contains the details of all items including the various attributes related to an item such as Part#, Name, Description, Units of Measure, etc.

The data contained within the catalog is at the xpedx level. There are approximately 1.2 Million items contained in the Catalog Master Data.

This detailed design document covers three major parts of the Catalog implementation –

1. The Catalog as implemented at xpedx – this includes the category structure, attribute usage, etc.
2. Functionality changes on the catalog pages in Sterling
3. The Item Master Load from Content Director – includes the mapping and connectivity.

## Structure of the Sterling Catalog

***Attributes***

Attributes are characteristics or specifications that further define Items. For example, a paper product's attributes may include:

1. Thickness
2. Color
3. Environmentally friendly

You can define a set of allowed values for attributes; for example, in the context of the Color attribute, defined values could be White, Red, etc.

To manage a catalog, we'll need to create and manage attributes by first defining the master attribute data. Typically, when an attribute is defined, the list of valid values that an attribute may have is defined along with it. In xpedx's case, we do not expect that the attribute transaction will contain the list of valid values. These values will be fed to Sterling via the Item interface.

***Categories***

Catalogs are organized into groups of items called categories that enable xpedx to classify an entire item set in a number of different hierarchical and searchable groupings.

At xpedx the category hierarchy is built from Content Director attributes called Category 1 thru Category 4.

***Attribute assignment to Categories***

After defining the categories for a catalog one can add items and assign attributes to the categories. After configuring master data for item-related attributes, assign these attributes to categories. When you assign an attribute to a category, the attribute is inherited by child categories and items within the categories. Inherited attributes allow you to easily assign attributes to large numbers of items.

On the Item Detail page if an attribute has no value, then the attribute is will not be shown Also, on the Item Compare page, if the all the items being compared do not have a value for an attribute, then it will not be shown.

When assigning attributes to categories, we define usages for attributes, such as attributes for filtering or comparing items.

The following usages can be assigned to an attribute -

1. Searching specifies that this attribute is used for searches.
2. Filtering specifies that this attribute is used to narrow the search results on the Web site.
3. Specification specifies that this attribute is displayed as an item specification on the website.
4. Distinct Attribute specifies that this attribute is used to define Items with Variations.

***Items***

Items are defined by specifying properties such as Part Number, Item Name, Item Description, Item status, Units of measure, etc.

Items are uniquely identified by the Item Part # in Sterling. It has been decided that the Legacy Part# will serve as this unique key.

When an item is defined, it may be associated with multiple categories. The item then inherits the attributes assigned to those categories automatically. For e.g, if we assign an attribute COLOR to the category or the parent category to which the item is assigned, the item will automatically have COLOR attribute assigned, but the value for the attribute needs to be assigned at the item level, say COLOR = Blue. Once the value is assigned the attribute is going to show up in the narrow by if the search results returns that item.

***Cross Sell/Up Sell Related Items***

Once an item has been setup in Sterling, it may be associated to other related items. The types of Item relationships that are supported in Sterling are Cross Sells/Upsells/Supersession/Alternative and Competitive. There is also a separate concept to manage auto replacements based on inventory.

The requirements for all related items have been captured in the Replacements DDD.

The association of related Items to a particular item is managed via a separate transaction in Sterling.

## Catalog Structure at xpedx

Each item in the Item Master is tied to an Ontology. xpedx has gone through an exercise to group similar Ontologies into what we henceforth refer to as “Product Type”s. These product types are used as a Filtering attribute (or Narrow By at the root level). This data is managed in Content Director. Product Types also drive the Matrix view display. This functionality is detailed in the Matrix view section.

Apart from Filtering, the product type will also used to drive functionality related to the Table view of items (referred to as Matrix view). This view is expected to be used by expert buyers. In this view, the products are listed in a tabular form, not a whole lot of graphics, with the most relevant differentiating attributes as columns and a user can quickly scan the list and decide on the products they are interested in.

The overall browsing experience can be summarized as follows –

The Column headings indicate the level of the category structure that a user is currently at and is determined by Product Type. This data is managed in Content Director. The row headings indicate the two sections on the left navigation bar. The Cells in the matrix determine what the user would see in which section when they click on the various levels of categories.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  | **CAT 1** | **CAT 2** | **CAT 3** | **CAT 4** |
| **Category:** | **CAT 2** | **CAT 3** | **CAT 4** |  |
| **Narrow By:** | **Product Type** | **Mfg** | **Basis Weight** |  |
|  |  | **Brand** | **Size** |  |
|  |  | **Environment** | **Color** |  |

Narrow bys at CAT3 and CAT4 level are data driven based on Ontology. The Narrow bys at CAT1 and CAT2 level are fixed. Based on data provided by xpedx, the number of attributes used as Narrow Bys are less than a dozen at the deepest level.

## Catalog Screens and Custom functionality

The list of all pages related to Catalog -

***Anonymous User***

1. Landing Page
2. Browsing Page – includes a combination of category and attribute based browsing.
3. Item Detail Page

***Customer User***

1. Landing Page
2. Catalog Home Page
3. Browsing page
4. Item Detail Page

The following section lists the changes that need to be made to each of the Catalog related pages to support xpedx requirements. This is a work in progress awaiting screens from IW to finalize and fill in the details.

## Anonymous User Pages

## Landing Page

## Catalog Browsing Page

## Item Detail Page

## Customer User Pages

## Landing Page

This page is different from current landing page in terms of functionality. Catalog related changes include –

1. Level 1 category highlighted based on Customer Profile – Based on the Customer profile, a Level 1 category is highlighted on the landing page. E.g. for Printing customers, the Paper Level 1 Category is highlighted along with links to its Level 2 categories directly from the landing page.
   1. Default preferred Category
   2. Use Paper Category if preferred not selected.
   3. Use first (alphabetical) Category (CAT1) if Paper Category not available (e.g. Due to Entitlement).

## Catalog Home Page

## Catalog Browsing Page

There are 2 Alternate views on the catalog page

* 1. A B2C style, 1 item per row view with images, etc. (The other 2 and 6 items per row view will also be used as is by xpedx).
  2. A B2B style, table view with multiple columns to quickly show relevant attributes.

1. There will be a user profile setting that will control the default style that is active while a user is browsing the site. The user may switch to the other view temporarily via “Alternate View” buttons or more permanently by changing this profile setting.
2. Product Type selection tied to B2B view – On the catalog browsing screen, a new “Alternate View” UI element will be added. When activated, this view will display items in a table format. The columns that are shown are however different based on business rules specified in 2.1.6. Each unique set of columns to be shown is referred to as a Template.

## Item Detail Page

1. Manufacturer Name hidden for some customers – This will be handled in the data. The attribute sent on the Item Master feed will set the Manufacturer Name to “xpedx” for such items. This will not be a customer specific attribute.

## Other functionality changes

1. Storing the Product Type to B2B Views mapping

[TBD] – Need to decide with xpedx how this data will make its ways into Sterling.

Answer: When a new template is introduced a common code needs to be added through Application Manager UI and the new template needs to be implemented by a developer.

1. New Templates for different tabular formats

The business rules for the B2B View are as follows. Each product type has two B2B views associated -

1. Fallback B2B View - this is shown when the current catalog view has items with different product types.
2. Preferred B2B View - this is shown when all the items in the current catalog view have the same product type.

Templates for B2B View – The attached file shows all the product type along with the mapped columns (Sterling to look at columns ‘Product Type Display on xcom’ and ‘Ontology Template Column Values’ from the attached doc)



If a product type Vs column mapping is not found, then the following Default Template will be used.

The **Default Template** shows the following attributes –

Sku,

Description,

Size,

Environment and

Stock Status.

***Assumption:*** A key assumption for the above solution to work would be that the data doesn’t have Product types that have conflicting templates as their fallback view. So we have to take care to define the Fallback view to one that takes into consideration any possible combination of product types that may appear on the screen.

***Assumption 2:*** The business rules regarding the template selection that is active at any given time is driven off of the Product Type and not on Categories. This was discussed in the meeting 5/4/2010 between Dave W., Steve B., Guy R. and Prashant G.

## Master System

Content Director is the master of system to maintain the Master Catalog data.

## Implementation Details

## Entity objects.

## Actions involved and Functions

## Process Flow

## Field Mapping

The following mapping contains the fields that are sent as part of the Item Master Feed from Content Director.



The following mapping contains the format/mapping of the Sterling interfaces that are gong to be used to load the Item Master data.



The sequencing of messages for the catalog load is as follows:

1. Attribute load (Preferably with all the valid values)
2. Category load
3. Item Load
4. Related Item Load

## Schema

For samples of the following three transactions, see the Appendix section.

## Attribute Transaction Schema (webMethods to Sterling)

<AttributeList>

 <Attribute

AttributeDomainID="<CONSTANT\_VAL>"

        AttributeGroupID="<CONSTANT\_VAL>"

AttributeID="<UniqueAttributeID>"

DataType="TEXT"

LongDescription="<Description>"

IsAllowedValueDefined="<Y>"

        Operation="<Manage/Delete>"

OrganizationCode="<CONSTANT\_VAL>"

SequenceNo="<SequenceOfAttributeDisplay>"

ShortDescription="<Attr\_Name>"

>

<AttributeAllowedValueList>

<AttributeAllowedValue

LongDescription="<Description>"

Operation="<Manage/Delete>" ShortDescription="<Display\_Value>"

Value="<Value>"

/>

</AttributeAllowedValueList>

</Attribute>

</AttributeList>

## Category Transaction Schema (webMethods to Sterling)

<CategoryList IgnoreOrdering="Y">

<Category

Action="<Manage/Delete>"

        CategoryID="<UniqueCatID>"

CategoryDomain="<CONSTANT\_VAL>"

        CategoryPath="/<Cat1/Cat2.../UniqueCatID>"

        Description="<Short\_Desc>"

IsClassification="N"

OrganizationCode="<CONSTANT\_VAL>"

SequenceNo="<SequenceOfCategoryDisplay>"

ShortDescription="<Display\_Name>"

SubCatalogOrganizationCode="<CONSTANT\_VAL\_BR2>"

Status="3000"

>

<AdditionalAttributeList>

<AdditionalAttribute

Name="<Attribute\_Name>"

Operation="<Manage/Delete>"

Value="<CONSTANT\_VAL>"

/>

</AdditionalAttributeList>

<ItemAttributeList>

<ItemAttribute

AttributeDomainID="<CONSTANT\_VAL>"

ItemAttributeGroupType=" SPEC,

FOR\_FILTER,

SEARCH,

DISTINCT\_ATTRIBUTES/>"

AttributeGroupID="<ATTR\_GRP\_CONSTANT>"

ItemAttributeName="<ATTR\_NAME>"

Operation="<Manage/Delete>"

SequenceNo="<SequenceForDisplay>"

/>

</ItemAttributeList>

</Category>

</CategoryList>

**Note:** There needs to be one ItemAttribute element for each ItemAttributeGroupType

## Item Transaction Schema (webMethods to Sterling)

<ItemList>

<Item Action="<Manage/Delete>"

ItemGroupCode="PROD"

ItemID=”<MasterProductCode>”

GlobalItemID=”<MasterProductCode>”

OrganizationCode="<CONSTANT\_VAL>"

UnitOfMeasure="<Unit Of Measure>"

>

<PrimaryInformation

Status="<3000,2000>"

CostCurrency=""

CountryOfOrigin=""

Description=""

EffectiveEndDate=""

EffectiveStartDate=""

ImageID=""

ImageLabel=""

ImageLocation=""

IsAirShippingAllowed=""

IsConfigurable=""

IsDeliveryAllowed=""

IsEligibleForShippingDiscount=""

IsForwardingAllowed=""

IsFreezerRequired=""

IsHazmat=""

IsModelItem=""

IsParcelShippingAllowed=""

IsPickupAllowed=""

IsPreConfigured=""

IsProcurementAllowed=""

IsReturnService=""

IsReturnable=""

IsShippingAllowed=""

IsSoldSeparately=""

IsStandaloneService=""

IsSubOnOrderAllowed=""

ItemType=""

Keywords=""

KitCode=""

ManufacturerItem=""

ManufacturerItemDesc=""

ManufacturerName=""

MasterCatalogID=""

MaxOrderQuantity=""

MinOrderQuantity=""

MinimumCapacityQuantity=""

ModelItemUnitOfMeasure=""

NumSecondarySerials=""

OrderingQuantityStrategy=""

PricingQuantityConvFactor=""

PricingQuantityStrategy=""

PricingUOM=""

PricingUOMStrategy=""

PrimaryEnterpriseCode=""

PrimarySupplier=""

ProductLine=""

RequiresProdAssociation=""

ReturnWindow=""

RunQuantity=""

SerializedFlag=""

ServiceTypeID=""

ShipmentConsolidationWindow=""

ShortDescription=""

SizeCode=""

TaxableFlag=""

UnitCost=""

UnitHeight=""

UnitHeightUOM=""

UnitLength=""

UnitLengthUOM=""

UnitWeight=""

UnitWeightUOM=""

UnitWidth=""

UnitWidthUOM=""

/>

<AdditionalAttributeList>

<AdditionalAttribute

AttributeDomainID="ItemAttribute"

AttributeGroupID="<CONSTANT\_VAL>

Name="<Atribute Name>"

Value="<Attribute Value>"

/>

</AdditionalAttributeList>

<AssetList>

<Asset

AssetID="<Unique ID for Asset>"

ContentID="<ContentId for Asset>"

Type="IMAGE"

Label="<LabelForAsset>"

ContentLocation="<CONTANT\_VAL>" Description="<DescriptionForAsset>"

/>

<AssetLocaleList>

  <AssetLocale

ContentID=""

ContentLocation="<CONSTANT\_VAL>" Country="<Country>"

Description=""

Label=""

Language="<LanguageForCountry>"

Variant=""

/>

</AssetLocaleList>

</AssetList>

<Category

CategoryID="<CategoryID>"

CategoryDomain="<CONSTANT\_VAL>"

CategoryPath="/="/<Cat1/Cat2.../UniqueCatID>" OrganizationCode="="<CONSTANT\_VAL>"

/>

</Item>

</ItemList>

## Related Item Schema (webMethods to Sterling)

Create/Modify Association

<AssociationList ItemID="" OrganizationCode="" UnifOfMeasure=""

<Association Action="" AssociatedQuantity="" AssociationType="" EffectiveFrom="" EffectiveTo="" Priority="">

<Item ItemID="" OrganizationCode="" UnitOfMeasure="" />

</Association >

</AssociationList>

Remove Association

<AssociationList ItemID="" OrganizationCode="" UnifOfMeasure=""

<Remove>

<Association Action="" AssociatedQuantity="" AssociationType="" EffectiveFrom="" EffectiveTo="" Priority="">

<Item ItemID="" OrganizationCode="" UnitOfMeasure="" />

</Association >

</Remove>

</AssociationList>

## Screen Shot

Screenshots are being maintained as separate wireframe documents. The one referenced here is “xpedx\_Catalog\_Wireframes\_5\_14\_10\_V6\_sent\_to\_xpedx.pdf”

***Anonymous Landing Page***

***Anonymous Catalog Browsing Page***

***Anonymous Item Detail Page***

***Customer User Landing Page***

***Customer User Catalog Home Page***

***Customer User Catalog Browsing Page***

***Customer User Item Detail Page***

## Open Questions

1. Are we able to use Legacy Part # instead of MPC as the Item key in Sterling? This is an ongoing discussion with xpedx/Sterling. Currently leaning towards using Legacy Part#.[Jasmine – 6/26 – Decided].
2. Interface sequencing requirements – based on conversations between Pawan/Vijay and xpedx, it was decided that wM would sequence the transactions. But in a follow-up meeting with Prashant, it was conveyed that Sterling would have to read the messages in the sequence that drives the Sterling catalog. This has not be decided upon. [Jasmine – 6/26 - . Sterling needs to manage this]. [Prashant 7/9 – Mutual agreed upon process has been defined and is included in this document]
3. Need to finalize the fields that are to be mapped from Content Director to Sterling.[Jasmine – 6/26 - . Once we get the completed map from Sterling xpedx will work on it.] [Prashant 7/9 – Map sent 7/7 and also included in this document].
4. Need screenshots for finalized anonymous experience.[Chris K. – 6/27 – Sent weeks ago.]
5. Need screenshots for finalized customer user experience. [Chris K. – 6/27 – Sent weeks ago.]
6. Cross sell/upsell information feed into Sterling.[ Jasmine – 6/26 – Provided].
7. How are we going to store the Product Type to Template mapping? Is this via a feed, new management screens?

Answer: Mapping will be stored as common code in Application manager.

1. Conflicting UOMs approach needs to be finalized with web methods. Viable Approach has been discussed between Sterling and George which needs to be validated with Scott (from web methods). Answer: The approach is wM is going to append system identifier ‘A\_’ or ‘M\_’ to the incoming requests to Sterling where ever UOM is involved and strip it off on the way back from Sterling to Legacy. Sterling will do the same for punchout, B2B orders and MIL import / export. wM is also going to look at the line type field value in some scenarios to decide whether to append the system identifier or not.
2. Connectivity diagram needs to be finalized and added. Answer: It is finalized and added in the document. Please look at section 3 of the document for the diagram and process flow.
3. Waiting on decision from Steve/George/Chris as how the catalog UI will be affected when the price for an item is not available or Zero. Answer: For BR1,
   * List page – wherever list price (NOT P&A response) is zero, display blank
   * Cart, Item Detail, etc – wherever P&A price is zero, display phone icon or call for price. In Call Center show $0.00
   * Order Detail/Detail (pages, emails) – display TBD on zero price. . In Call Center show $0.00

## Assumptions

1. All items that are present in the system have to be fed into Sterling via the Catalog Interface. The misc charges need to be stored as common codes in application manager and read these codes in a drop down while CSR orders in Call Center.
2. This includes any special legacy parts like those used for some Miscellaneous Charge Lines as well as for Promotion Lines and Comment Lines.
3. Access has only two UoMs per Item, MAX may have upto 8 UoMs per Item.
4. Any customer specific Item data is fed into Sterling via the Customer Cross Reference Batch feed.
5. Any division specific Item data is fed into Sterling via the Item Information Batch (Division Item file).
6. Today Content Director stores Kits as well, but they are modeled as regular products with a separate part# and the description contains all the information about the individual components. These will be treated no different than a regular product in Sterling for BR1.
7. The initial load will be a full load. Subsequent loads will be deltas sending across only information that has changed.
8. The List price displayed in the catalog will be part of a separate feed – the price book feed.
9. Attributes to be displayed in the narrow by alphabetically.
10. Show product Description and Short Description in all the pages except the B2B / Matrix view. Description as bullet points needed.

# Connectivity Diagram

## Master Catalog Connectivity Diagram



## Connectivity Process

1. Content Director monitors the Item information for changes.
2. If there are any changes, all related transactions are triggered via webMethods.
3. webMethods picks the changes, formats them into the Sterling format and places them on MQ from where Sterling picks up the data
4. Sterling puts message back into MQ with the correlation id for both success / failure of the transaction.
5. Web Methods picks the response messages and route it back to Content Director.

# Glossary of Terms

|  |  |  |
| --- | --- | --- |
| S. No. | Term | Definition |
| 1. | WSDL | Web Services Definition Language |
| 2. | UE (User Exit) | Hooks to write custom code in Sterling |
| 3. | MQ | Message Queue |
| 4. | BR1 | Business Release 1 |
| 5. | IW | Industrial Wisdom – UI firm engaged on the project. |
|  |  |  |
|  |  |  |

# Appendix

***Attribute Transaction Sample***



***Category Transaction Sample***



***Item Transaction Sample***



***Related Item Sample – Association***

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***Related Item Sample – Remove Association***

