cXL ontology system, Cyscom Biznet Services work flow and business applications

Get to know the power of cXL®
cXL structures, enriches and semantically maps product data into a repository for work flow and applications.
3 components of cXL

- catalog creator
- catalog aggregator
- catalog integrator

**cXL** standardizes information from proprietary data formats, semantically maps data and metadata from incompatible sources and converts information between different formats.
• users (without any development or outsourcing requirements) create their own catalog structures using both online & offline tools

• supports unlimited product types, attributes, properties and cross reference functionality

• catalog content is managed via MS products and Cyscom powerful offline tool
ADD/EDIT PRODUCT TYPES: Create a new type

Product types are defined as groups of products which share common properties and parameters. By defining types, a user may group products into categories or types which share properties and other parameters. You can now create new product types.

Create product types by entering the product type 'Name' and by clicking on 'create type' to set up the new product type in your catalog.

Product Type Name: 

Create subcategory for the new product type

Classification tree
select the node that will be the parent for the created one

- All goods
- Books
- Action & Thrillers
- Adventure
- Female operatives
- Horror and suspense
- Trillers
- Arts, music, entertainment & culture
- Arts and architecture

Name

Description
shown as hint; fill this field when node name is long or not plain

Create product type  Cancel
You may also delete it by clicking on 'Delete Property' and rename the Product Type.

**Product Type Name:** books

**Current Properties List**

<table>
<thead>
<tr>
<th>Name</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>author</td>
<td>Edit property</td>
</tr>
<tr>
<td>Category</td>
<td>Edit property</td>
</tr>
<tr>
<td>genre_books</td>
<td>Edit property</td>
</tr>
<tr>
<td>ISBN</td>
<td>Edit property</td>
</tr>
<tr>
<td>jacket</td>
<td>Edit property</td>
</tr>
<tr>
<td>pages</td>
<td>Edit property</td>
</tr>
<tr>
<td>publishing</td>
<td>Edit property</td>
</tr>
<tr>
<td>summary</td>
<td>Edit property</td>
</tr>
<tr>
<td>title</td>
<td>Edit property</td>
</tr>
<tr>
<td>year_of_issue</td>
<td>Edit property</td>
</tr>
</tbody>
</table>

- Edit property
- Delete property
- Edit property content

Create new property

Add from Properties List Manager

111
artist/group
cast
credits
Digital Software Content
features
film_duration
film_studio
info
label

Add selected property(ies)
PROPERTY CREATION WIZARD - STEP 1: Defining the property type

Select a property type that is the most appropriate for your product type from the list below. Different property types allow for different ways to express the property and how a buyer views the property information in your catalog.

You are presented with a list of different available properties for the product type. Proceed to select the most appropriate property type from the list and click on 'Next' to go to the following step in the wizard.

Property name: author
Included in groups: books

Select property type from list below (note: which type you select depends on the values a property may contain and which are appropriate for the product type)

- **Number**
  - With number type, property values are expressed by numbers and may contain only digits, sign & decimal separator.
  - Examples of this type are: height, weight, price.

- **String**
  - With string type, property values are expressed by strings of text and may contain letters & symbols.
  - Examples of this type are: name, description, item#, etc.

- **Select from list**
  - With this type, property value is expressed by a set of predefined values (e.g. brands, months, etc) which can appear as a drop down list. Be sure not to confuse this property type with Multiselect.

- **Multiselect**
  - With multiselect type, property value is expressed by a subset of values from an already predefined set of a values.
  - Examples of this type are: the list of cars where an autopart can be used, an ingredient that can be used in a recipe.

- **Boolean**
  - With boolean type, the property value appears as a Yes or No value.
  - Examples of this type are: WAP support for phones (Yes) or (No); reconditioned autopart (Yes) or (No).

- **Date/time**
  - With date type, property value is expressed by a date.
  - Examples of this type are: production date, expiration date.

- **Classification tree**
  - With classification type, the property value allows user to classify products inside different product categories (categories such as "Books", "CDs", etc), where the different product categories are arranged in a hierarchical structure (contained in a two classification system with branches).
PROPERTY CREATION WIZARD - STEP 3: Defining the search filters

Select the filters you would like to apply to the property type. The type of filter you select will serve as the interface used by both buyers and your site administrators to locate a product in the catalog.

Proceed to customize your search filter by selecting the most appropriate filter from the list below. Note: different property types have different available filters to select from. You may also choose to customize a filter as well as deciding not to apply a filter to the property type by selecting 'No search'. Click on 'Next/Finish' to save your changes & go to the next step if you've selected custom settings.

Property name: author
Included in groups: books

You may specify search filters for any property type. The filter will apply to both buyer side price list and to several back office tools. User will be able to locate catalog products according to the selected search filter.

- **Simple string filter**
  - String filter
  - Looks like

- **Alphabet filter**
  - Extended filter for string properties.
  - Looks like [ ja* ] [ je* ] [ jo* ] [ ju* ] [Show all]

- **Custom filter settings (advanced users)**
  - You can set up advanced filter configuration

- **No search**
  - Users will be unable to specify search conditions for this property
Filling your Template with Content

Now let's slide in your ERP catalog in order to transfer content from your ERP catalog to your template. Proceed to simply select rows of data from your ERP catalog and copy it to the template. In a matter of minutes, you have transferred thousands of SKU's and have filled your template with product content.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>Special price</td>
<td>Inventory</td>
<td>SKU#</td>
<td>Brand</td>
</tr>
<tr>
<td>143</td>
<td>140</td>
<td>25</td>
<td>SD142-Q</td>
<td>1042 BERU</td>
</tr>
<tr>
<td>329</td>
<td>0</td>
<td>25</td>
<td>BB23-3-FG1</td>
<td>1056 BILSTEIN</td>
</tr>
<tr>
<td>1126</td>
<td>1000</td>
<td>25</td>
<td>S-045J-WHELL-34</td>
<td>1036 BOGE</td>
</tr>
<tr>
<td>211</td>
<td>0</td>
<td>25</td>
<td>IUR003-11-OLL1</td>
<td>1002 BOSAL</td>
</tr>
<tr>
<td>309</td>
<td>0</td>
<td>25</td>
<td>FAUS34-08</td>
<td>1014 BOSCH</td>
</tr>
<tr>
<td>469</td>
<td>450</td>
<td>25</td>
<td>RTY-N3467-F</td>
<td>1029 FARCOM</td>
</tr>
<tr>
<td>12,45</td>
<td>0</td>
<td>25</td>
<td>QQ-2S-HHI-1</td>
<td>1030 GKN (SPIDAN)</td>
</tr>
<tr>
<td>320,99</td>
<td>0</td>
<td>25</td>
<td>GHBD-2</td>
<td>1025 HK AUTOTEILE</td>
</tr>
<tr>
<td>144</td>
<td>0</td>
<td>25</td>
<td>WEKRF-76AST</td>
<td>1100 LEISTRITZ</td>
</tr>
<tr>
<td>70</td>
<td>0</td>
<td>25</td>
<td>HORG23-TY</td>
<td>1068 HERTH + BUSS (Autoelektrik)</td>
</tr>
<tr>
<td>1398</td>
<td>1256</td>
<td>25</td>
<td>S-045J-WHELL-34</td>
<td>1089 GOETZE MOTORENTEILE</td>
</tr>
<tr>
<td>1398</td>
<td>1256</td>
<td>25</td>
<td>S-045J-WHELL-34</td>
<td>1089 GOETZE MOTORENTEILE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Price</th>
<th>Special price</th>
<th>Inventory</th>
<th>SKU#</th>
<th>Brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1042 BERU</td>
<td>Wheel suspension</td>
<td>Alpha Romeo 146/930</td>
<td>20.12.20</td>
<td></td>
</tr>
<tr>
<td>1056 BILSTEIN</td>
<td>Engine suspension</td>
<td>Audi 100</td>
<td>18.11.20</td>
<td></td>
</tr>
<tr>
<td>1036 BOGE</td>
<td>Wheel suspension</td>
<td>BMW 325</td>
<td>21.01.16</td>
<td></td>
</tr>
<tr>
<td>1002 BOSAL</td>
<td>Wheel suspension</td>
<td>Alpha Romeo 146/930</td>
<td>08.02.18</td>
<td></td>
</tr>
<tr>
<td>1014 BOSCH</td>
<td>Wheel suspension</td>
<td>Audi A4</td>
<td>21.11.16</td>
<td></td>
</tr>
<tr>
<td>1029 FARCOM</td>
<td>Suspension/damping</td>
<td>Audi 100</td>
<td>12.10.20</td>
<td></td>
</tr>
<tr>
<td>1030 GKN (SPIDAN)</td>
<td>Engine suspension</td>
<td>BMW Z1</td>
<td>01.01.20</td>
<td></td>
</tr>
<tr>
<td>1025 HK AUTOTEILE</td>
<td>Suspension/damping</td>
<td>Alpha Romeo 146/930</td>
<td>03.12.20</td>
<td></td>
</tr>
<tr>
<td>1100 LEISTRITZ</td>
<td>Wheel suspension</td>
<td>Audi A4</td>
<td>29.03.16</td>
<td></td>
</tr>
<tr>
<td>SKU</td>
<td>Item Name</td>
<td>Coffee Brand</td>
<td>Country Origin</td>
<td>Weight</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>33219</td>
<td>Mocco</td>
<td>Tchibo</td>
<td>Germany</td>
<td>250 g</td>
</tr>
<tr>
<td>33220</td>
<td>Mild</td>
<td>Tchibo</td>
<td>Germany</td>
<td>100 g</td>
</tr>
<tr>
<td>33221</td>
<td>Vanilla</td>
<td>Amado</td>
<td>Colombia</td>
<td>150 g</td>
</tr>
<tr>
<td>33222</td>
<td>Coffee and milk</td>
<td>Tchibo</td>
<td>Germany</td>
<td>200 g</td>
</tr>
</tbody>
</table>
Catalog Aggregator

- Creating subscriber registry and partner profiles
- Mapping of user incompatible user catalogs into 1 master repository catalog for any business application and integration of participants
- Tracking of master catalog schema and automatic online schema updates
- Synchronization of content to form knowledge base product catalog
Creating database of subscribers and adding to registry

Supplier's name: Sample supplier

Last catalog update date: 10.09.2001

Supplier is blocked

Certificate information:
- Agency
- Organization id

View certificate

Supplier's info:
This is a sample description of the supplier. In real life we will describe all valuable information about real supplier

Buttons:
- OK
- Cancel
- Apply
- Help
Transport Rules

- **Define transport method**
  - Ordinal
    - HTTP
    - SMTP (email)
    - FTP (or offline file transfer e.g. via diskette)
  - Advanced
    - BizTalk
    - ebXML
    - Rosetta Net
    - EDI-Fact
    - other

- **Setup security options**
  - Client certificate exchange -X.509
  - Password exchange
Set up transport rules for transfer via email

Merchant address: catalog@company.com
Select type: SMTP

E-mail: mrozov@cyscom.com

Should be encrypted: Yes
Should be signed: Yes
Import/Export: Import

[Buttons: OK, Cancel, Apply, Help]
Set up transport rules for transfer via BizTalk
Setting up security options - X.509 certificate exchange

Certificate Information

This certificate is intended to:
- Ensures software came from software publisher
- Protects software from alteration after publication
- Windows Hardware Driver Verification

Issued to: Microsoft Windows Hardware Compatibility

Issued by: Microsoft Root Authority

Valid from 10/01/1997 to 12/31/2002
Creating master Repository catalog

- Create catalog structure: product types, properties, classification structure
- Upload subscriber catalogs & create mapping rules
- Transform text catalogs into XML format
- Define semantic mapping rules on meta data and data level
- Substitute or enrich catalogs from catalog repository
- Define mapping rules between incompatible catalogs

Managing Knowledge base catalog

- Importing and exporting catalogs
- Synchronizing content from multiple catalogs
Importing subscriber catalogs and encoding into XML
### Supplier catalog

<table>
<thead>
<tr>
<th>Structure</th>
<th>Data</th>
<th>Type</th>
<th>Finished</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;catalog&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;category caption&gt;</td>
<td>caption=motherboards</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>&lt;subcategory caption&gt;</td>
<td>caption=acorp</td>
<td>category</td>
<td>✓</td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=Acorp 7KTA/K7,...</td>
<td>article</td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=...</td>
<td>article</td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=...</td>
<td>article</td>
<td></td>
</tr>
<tr>
<td>&lt;subcategory caption&gt;</td>
<td>caption=asustek</td>
<td>category</td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=Asus CUR-DLS ...</td>
<td>article</td>
<td></td>
</tr>
<tr>
<td>&lt;category caption&gt;</td>
<td>caption=processors</td>
<td>category</td>
<td></td>
</tr>
<tr>
<td>&lt;subcategory caption&gt;</td>
<td>caption=Intel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=Pentium-III XEO...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>descr=...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;subcategory caption&gt;</td>
<td>...</td>
<td>category</td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;article descr price1 price&gt;</td>
<td>...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Parent Category Rules

<table>
<thead>
<tr>
<th>Type</th>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>article.descr contains &quot;pentium&quot;</td>
<td>Add element &lt;processor&gt; with value &quot;Pentium&quot;</td>
</tr>
<tr>
<td>Own</td>
<td>article.descr contains &quot;pentium&quot;</td>
<td>Add element &lt;processor&gt; with value &quot;Pentium&quot;</td>
</tr>
</tbody>
</table>

Semantic mapping of subscriber catalog on meta data level
Create rules (conditions & actions) for semantic mapping

- New condition: AND
  - Field: model
  - Condition type: contains
  - Value: Celeron

- New condition: AND
  - Field: Brand
  - Condition type: is (exactly)
  - Value: Intel

Result:
('Brand' equal "Intel") or ('model' contain "Celeron")
Enrich subscriber catalog from master catalog repository

<table>
<thead>
<tr>
<th>Supplier catalog</th>
<th>Data</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rule Editor**

**Condition**

- Substitute description from Catalog Repository

**Action**

- Intel Celeron Cooperman 800 EAX ....
- Select Product ...

**Enrich product description**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>brand</td>
<td>Intel</td>
</tr>
</tbody>
</table>

Repository Wizard ...

List of enriching properties:

| brand | intel |

Parent Category Rules

<table>
<thead>
<tr>
<th>Type</th>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>article.descr contains &quot;pentium&quot;</td>
<td>Add element &lt;processor&gt; with value &quot;intel&quot;</td>
</tr>
<tr>
<td>Own</td>
<td>article.descr contains &quot;pentium&quot;</td>
<td>Add element &lt;processor&gt; with value &quot;intel&quot;</td>
</tr>
</tbody>
</table>
Search master catalog repository for matching article
Add properties from repository to enrich subscriber catalog

### Select Property Wizard - Step 2

**Step 2**

**Chosen article:**

Intel Celeron Cooperman 800 EAX....

**Select property & value**

<table>
<thead>
<tr>
<th>Available Properties</th>
<th>Chosen Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand</td>
<td>Model code</td>
</tr>
<tr>
<td>Intel</td>
<td>FCPGA</td>
</tr>
<tr>
<td>Celeron</td>
<td>Frequency</td>
</tr>
<tr>
<td>150 g.</td>
<td>800</td>
</tr>
<tr>
<td>Model code</td>
<td>Cash L1</td>
</tr>
<tr>
<td></td>
<td>16K+16K</td>
</tr>
<tr>
<td>Weight</td>
<td>Cash L2</td>
</tr>
<tr>
<td></td>
<td>128K</td>
</tr>
<tr>
<td>Base Frequency</td>
<td>Multiply</td>
</tr>
<tr>
<td>66MHz</td>
<td>12</td>
</tr>
<tr>
<td>Voltage</td>
<td>Voltage</td>
</tr>
<tr>
<td>2V</td>
<td>Technology</td>
</tr>
<tr>
<td>Picture</td>
<td>0.25 mk</td>
</tr>
<tr>
<td>Picture</td>
<td></td>
</tr>
</tbody>
</table>

**List of enriching properties:**

- brand: Intel
- <new>
Create mapping rules between incompatible subscriber catalog & master catalog
Track and handle catalog upload errors

Window Header

New Catalog | Transport

Supplier list

supplier 1
supplier2
supplier3

Supplier info

Supplier name: supplier1
Supplier caption: This supplier is very valuable for us.
This is a sample description of the supplier.
In real life we will describe all valuable information about real supplier.

Supplier catalogs

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Date-Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>catalog 1</td>
<td>received</td>
<td>10.10.2001</td>
</tr>
<tr>
<td>catalog 2</td>
<td>received</td>
<td>11.10.2001</td>
</tr>
<tr>
<td>catalog 3</td>
<td>decoded</td>
<td>10.11.2001</td>
</tr>
</tbody>
</table>

Selected catalog information

Status - decoded
Error stage - Translating to XML
Error caption - Error occurred while translating. Error message - wrong file format.
Synchronize content from multiple catalogs into knowledge base catalog
Catalog Integrator:
information exchange system

cXL® browser based transport channel integrates critical mass of participants because it does not require any customization of ERP systems

- Standard catalog online (via catalog aggregator)
- User ERP catalog (incompatible)

- Internal XML messaging system:
  - Converter
  - XML ↔ Any supported format
    - XML
    - cXML
    - xCBL
    ...

- protocols transport
  - HTTP
  - HTTPS
  - SMTP
  - FTP
  ...

- customized transport
  - HTTP

- browser transport
  - HTTP
  - HTTPS

- Customer Integration via browser
  - backoffice (ERP) system

- Customer Seamless integration via EDI
  - backoffice (ERP) system

- Customer Integration via customized interface
  - backoffice plug-in
  - backoffice (ERP) system (non EDI)
cXL under pins work flow layer that is user modeled and business applications

Marketplaces, Networks, Supply chains, Procurement systems function across any integration scenario

Business Applications & Channels

Application Manager

Partnership Manager

Catalog Manager

ERP systems

Content web sites

Catalogs are consolidated into industry catalog with open interfaces for any business application

User catalogs are created & product content managed

cXL technology
Architecture

Only required if ERP system doesn't support communication over Internet.

Depending on partner business processes compatibility it sets up:
- automatic,
- requires form-based customization,
- requires mediator process with static and dynamic model mapping.

User1 Offline "ERP" System
- Integration module

User1 Online System
- User1 Online Workflow Engine
- User1 Online "ERP" Applications

User1 mediator

to User2

Optional: only for users that prefer to work online.
CBS Work flow and business processes are user created dynamic models

• Models of workflow processes
  – user can create a new workflow process by drawing a UML based workflow diagrams
  – only basic understanding of modeling essentials such as document, state or event is required

• Ability to create a system from design patterns e.g.
  – wait for document
  – send document
  – change document
Business applications such as marketplaces require product repository and company registry to provide value.

- Locate products
- Locate partners

Product Repository

Company Registry

Trade Broker
Example of how sub set catalog “Auto parts catalog>BEF currency>stoplight switch>Hella brand>view details>locate best price” parametric search locates optimal purchase conditions

<table>
<thead>
<tr>
<th>SKU#</th>
<th>Description</th>
<th>Brand</th>
<th>APC</th>
<th>City</th>
<th>Price</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6DF 007 361-001</td>
<td>STOPLIGHT SWITCH</td>
<td>HELLA</td>
<td>Auto Superiore S.A.</td>
<td>Pans</td>
<td>141.11 EUR (6,644.51 BEF)</td>
<td>[Add] / [View]</td>
</tr>
<tr>
<td>6DF 007 361-001</td>
<td>STOPLIGHT SWITCH</td>
<td>HELLA</td>
<td>Firenze Motors</td>
<td>Turin</td>
<td>421,200.00 ITL (8,760.96 BEF)</td>
<td>[Add] / [View]</td>
</tr>
<tr>
<td>6DF 007 361-001</td>
<td>STOPLIGHT SWITCH</td>
<td>HELLA</td>
<td>Best Auto Parts</td>
<td>London</td>
<td>144.55 GBP (9,540.02 BEF)</td>
<td>[Add] / [View]</td>
</tr>
</tbody>
</table>

* - Special price exists. Please press "view" link to see special prices.

Reset compare list

**FULL SKU INFO**

<table>
<thead>
<tr>
<th>SKU#</th>
<th>Description</th>
<th>Other info</th>
<th>Brand</th>
<th>Price</th>
<th>Delivery info</th>
<th>Warranty info</th>
<th>Notes</th>
<th>Discounts</th>
<th>Compatible vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 344 101 044</td>
<td>Low-oil-pressure indic. switch</td>
<td>0683 Low-oil-pressure indic. switch</td>
<td>BOSCH</td>
<td>162.78 GBP</td>
<td>5 days</td>
<td>2 years</td>
<td>Compatible with 684 3e33 333 and 6DF 007 361-001</td>
<td>Club members:</td>
<td>154.09 GBP</td>
</tr>
</tbody>
</table>

If you need technical information on this product and would like to speak with a
ERP based solutions are not cost efficient and fail to integrate Tier 1 companies with SME’s in different business environments.

- ERP integration between Tier 1 companies requires exchange protocol.
- ERP integration with SME’s requires costly customized adaptor.
- ERP integration with SME web sites is unaffordable.

ERP systems with XML interface:
- Integrates with Tier 1 companies.
- Integrates with SMEs.
- Integrates with SME web sites.

ERP systems without XML interface:
- Inefficient in integrating with Tier 1 companies.
- Costly to integrate with SMEs.
- Unaffordable to integrate with SME web sites.
CBS delivers low cost & fast integration of SME’s into any business environment no matter the partner’s IT capabilities.

Web based master catalog exchanges information between incompatible systems.
CBS is the first interoperable platform which is fully scalable from SME’s to large corporates and integrates subscribers vertically down any procurement & supply chain, marketplace or private network.

CBS receives messages from any originating output format (arrow of 1 color), converts & transports to addressee’s supported input format (arrow of same color).