cXL ontology system, Cyscom Biznet Services work flow and business applications
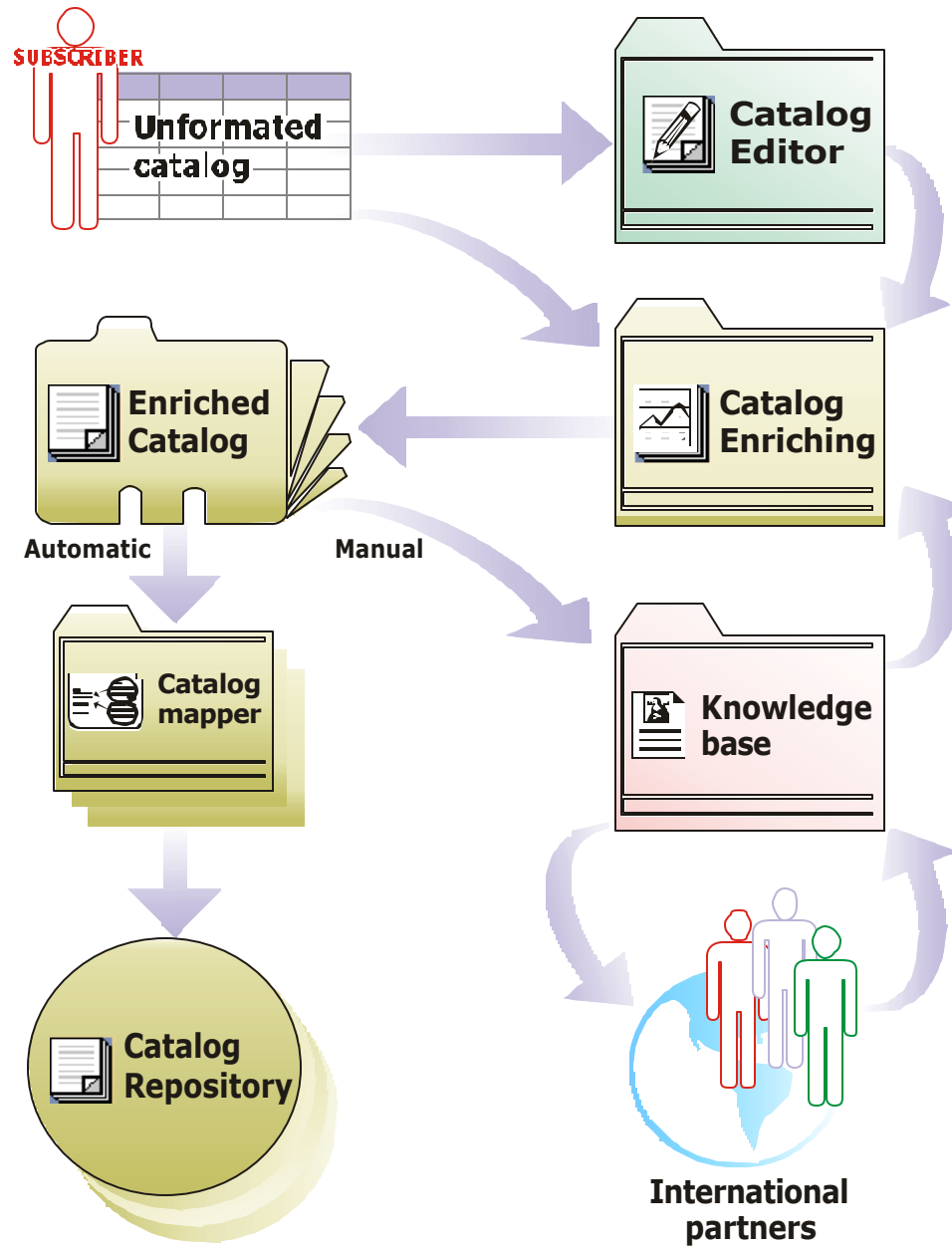
cXL structures, enriches and semantically maps product data into a repository for work flow and applications

cXL is an ontology management system to structure and standardize data between users

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.

Catalog Creator

- users (without any development our 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

Online tool for creation of data and meta data

File   Edit   View   Favorites   Tools   Help

Links   Customize Links   Free Hotmail   Windows Media   »

Address   http://ds.cyscom.com/books/backoffice/structure_editor_group_editor.asp?group_id=1   Go

to redefine the current property.
You may also delete it by clicking on 'Delete Property' and rename the Product Type.

Product Type Name: books   Rename

Current Properties List

Found records: **10**

Rows/page
10 ▼ »»

Name	Action		
author	Edit property	Delete property	
Category	Edit property	Delete property	Edit property content
genre_books	Edit property	Delete property	Edit property content
ISBN	Edit property	Delete property	
jacket	Edit property	Delete property	Edit property content
pages	Edit property	Delete property	
publishing	Edit property	Delete property	
summary	Edit property	Delete property	
title	Edit property	Delete property	
year_of_issue	Edit property	Delete property	

Create new property

Add from Properties List Manager

```
111
artist/group
cast
credits
Digital Software Content
features
film_duration
film_studio
info
label
```
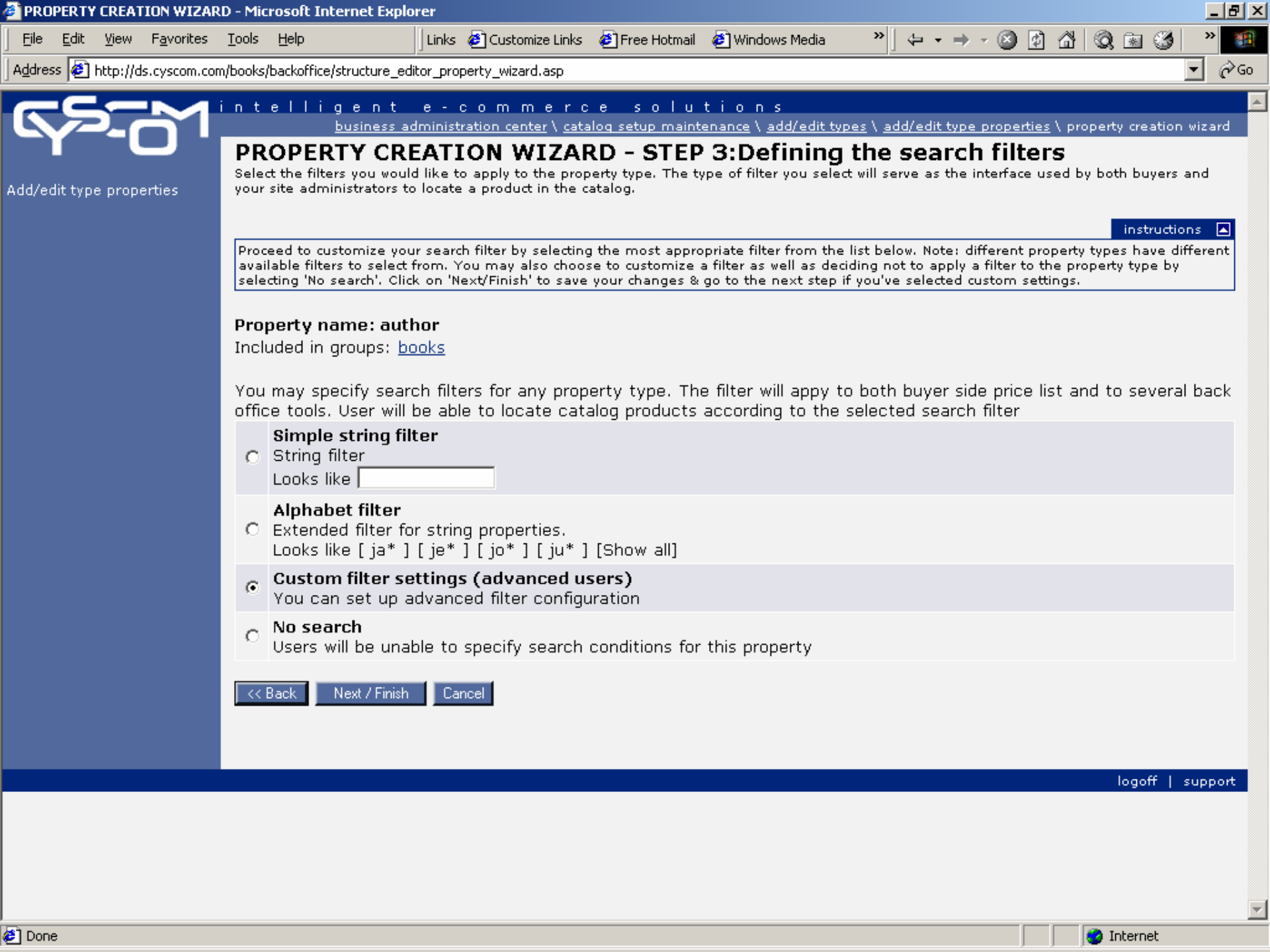
Add selected property(ies)

Internet

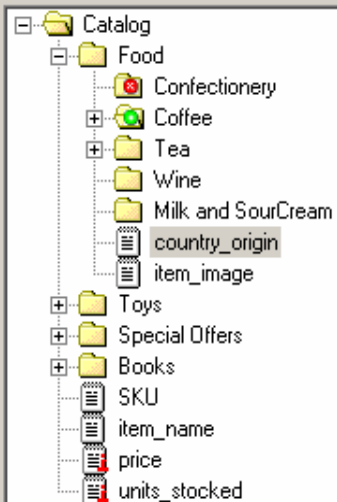# PROPERTY CREATION WIZARD - STEP 1:Defining the property type

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

Add/edit type properties

instructions

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

Done   Internet

CYSCOM

intelligent   e-commerce   solutions

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.

Add/edit type properties

instructions

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 appy 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

[<< Back]   [Next / Finish]   [Cancel]

Done   Internet

Filling your Template with Content

Now lets 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

Microsoft Excel - ERP Catalog.xls

	A	B	C	D	E
1	Price	Special price	Inventory	SKU#	Brand
2	143	140	25	SD142-Q	1042 BERU
3	329	0	25	BB23-3-FG1	1056 BILSTEIN
4	1126	1000	25	S-045J-WHELL-34	1036 BOGE
5	211	0	25	IUR003-11-OLL1	1002 BOSAL
6	309	0	25	FAUS34-08	1014 BOSCH
7	469	450	25	RTY-N3467-F	1029 FARCOM
8	12,45	0	25	QQ-2S-HHI-1	1030 GKN (SPIDAN)
9	320,99	0	25	GHBD-2	1025 HK AUTOTEILE
10	144	0	25	WEKRF-76AST	1100 LEISTRITZ
11	70	0	25	HORG23-TY	1068 HERTH + BUSS (Autoelektrik)
12	1398	1256	25	12A-TEBS0	1089 GOETZE MOTORENTEILE
13					
14					
15					

SD142-Q
BB23-3-FG1
S-045J-WHELL-34
IUR003-11-OLL1
FAUS34-08
RTY-N3467-F
QQ-2S-HHI-1
GHBD-2
WEKRF-76AST
HORG23-TY
12A-TEBS0

Microsoft Excel - Catalog_template.xls

	A	B	C	D	E	F	G	
1	Price	Special price	Inventory	SKU#	Brand	Category	Compatible vehicles	Product
2					1042 BERU	Wheel suspension	Alpha Romeo 146(930)	20.12.20
3					1056 BILSTEIN	Engine suspension	Audi 100	18.11.20
4					1036 BOGE	Wheel suspension	BMW 325	21.01.19
5					1002 BOSAL	Wheel suspension	Alpha Romeo 146(930)	08.02.19
6					1014 BOSCH	Wheel suspension	Audi A4	21.11.19
7					1029 FARCOM	Suspension/damping	Audi 100	12.10.20
8					1030 GKN (SPIDAN)	Engine suspension	BMW Z1	01.01.20
9					1025 HK AUTOTEILE	Suspension/damping	Alpha Romeo 146(930)	03.12.20
10					1100 LEISTRITZ	Wheel suspension	Audi A4	29.03.19

Done　　　My Computer

Catalog   Edit   View   Search   Tools   Window   Help

English   Russian

Schema Tree

- Catalog
  - Food
    - Confectionery
    - Coffee
    - Tea
    - Wine
    - Milk and SourCream
    - country_origin
    - item_image
  - Toys
  - Special Offers
  - Books
  - SKU
  - item_name
  - price
  - units_stocked

Property Editor

Property Name	country_origin
Property Label	Country Origin
Property Comments	Country of manufacture
Property Type	List Value

Metadata Association

country_origins   Edit   New

Default Value   <none>

☐ Multiplicated
☑ Searchable
☑ Sortable

Categories property is used in

- Catalog

Select property to add to catalog item

Type in property to find

List of properties	Usage
coffee_brand	1
coffee_form_of_pr...	1
colour	5
item_name	2
width	2
height	1
depth	2

Add properties to category

Catalog | Edit | View | Search | Tools | Window | Help

English | Russian

(All Items)

Schema Tree

- Catalog
  - Food(4)
    - Confectionery(0)
    - Coffee(4)
    - Tea(0)
    - Wine(0)
    - Milk and SourCream(0)
  - Toys(1)
  - Special Offers(1)
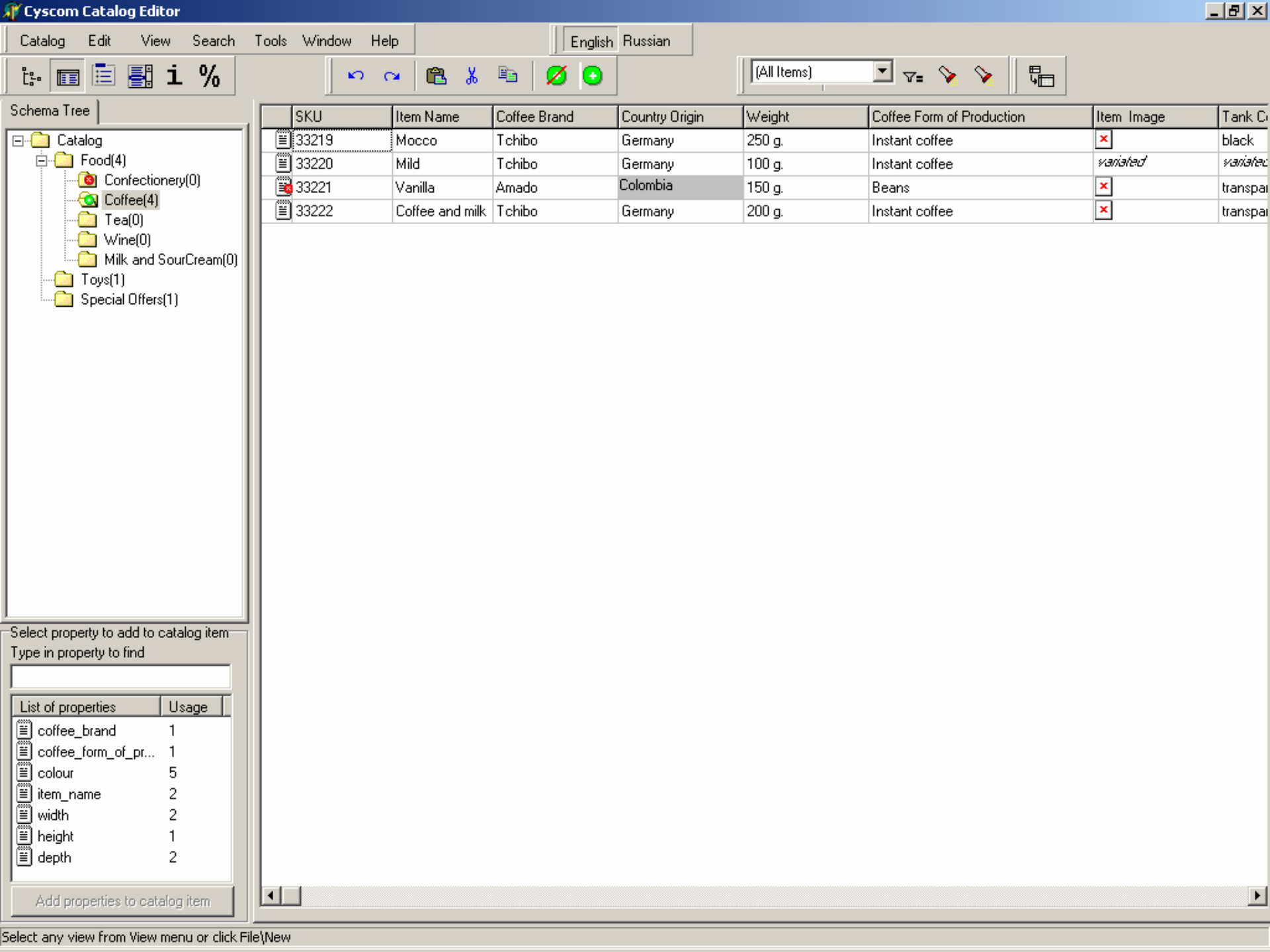
SKU	Item Name	Coffee Brand	Country Origin	Weight	Coffee Form of Production	Item Image	Tank C
33219	Mocco	Tchibo	Germany	250 g.	Instant coffee	x	black
33220	Mild	Tchibo	Germany	100 g.	Instant coffee	variated	variated
33221	Vanilla	Amado	Colombia	150 g.	Beans	x	transpa
33222	Coffee and milk	Tchibo	Germany	200 g.	Instant coffee	x	transpa

Select property to add to catalog item

Type in property to find

List of properties	Usage
coffee_brand	1
coffee_form_of_pr...	1
colour	5
item_name	2
width	2
height	1
depth	2

Add properties to catalog item

Select any view from View menu or click File\New

(All Items)

ch Results

	Description
7	Tchibo Mild
8	Lipton Yellow Label Tea
9	Tchibo Mild + Starlight E...
20	Tchibo Mocco
01	MS SQL Server 2000 for ...

Product categories

⊞ 📁 Catalog

Add

Dele

Catalog Item Properties

In Variation Causes Variation

SKU (Item's ID) `33217` ☐ ☐

Item Name (General item's heading) `Mild` L ☐ ☐

Coffee Brand (The trademark or...) `Tchibo` ☐ ☐

Country Origin (Country of manufa...) `Germany` ☐ ☐

Weight (The weight of one instance) `250` `gramms` ☐ ☐

Coffee Form of Production (Form...) `Instant coffee` ☐ ☐

Item Image:1 (The appearance of...)

Load...

Delete

Other instances

☑ ☐

6 items found

ct property to add to catalog item
 in property to find

of properties	Usage
coffee_brand	1
coffee_form_of_pr...	1
colour	5
item_name	2
width	2
height	1
depth	2

Add properties to catalog item

☑ Variation

Variations

	No	tank_color	price	image
❌				
	1	black	$10	▣
	2	red	$10	
	3	yellow	$11	
	4	transparent	$11	

☐ In Bundle Only

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

SupplierEditForm

Info | Formates | Address

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

✓ 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

SupplierEditForm ✕

| Info | Formates | **Address** |

➕ ➖ 🔺 🔻

address 1
address2
address3

Merchant address

catalog@company.com

Select type

SMTP ▾

Comments

E-mail

mrozov@cyscom.com

┌─ Should be encrypted ─┐
◉ Yes
○ No

┌─ Should be signed ─┐
◉ Yes
○ No

┌─ Import/Export ─┐
◉ Import
○ Export

✓ OK ✗ Cancel ✓ Apply ? Help

Set up transport rules for transfer via BizTalk

SupplierEditForm

Info | Formates | **Address**

- address 1
- address2
- address3

Merchant name

Company Biztalk Server

Select type

BizTalk

Comments

Collaborative BizTalk Server Options

Address	123.45.67.89
Format	BizTalk Framework 2.0
Timeout (sec.)	10000
Retry Attempts	10
Schemas	CYSCOM_BizTalk_1_1.xml

Save...

✓ OK ✗ Cancel ✓ Apply ? Help

Setting up security options-X.509 certificate exchange

SupplierEditForm

Info | Formates | Address

Supplier's name

Sample supplier

Last catalo

☐ 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

✓ OK   ✗ Cancel   ✓ Apply   ? Help

Certificate

General | Details | Certification Path

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

Issuer Statement

OK

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

Semantic mapping of subscriber catalog on meta data level

Enrich

Enrich   Edit   Tools   Help

Supplier catalog

Structure	Data	Type	Finished	
📂 <catalog>				
📂 <category caption>	caption=motherboards		☑	
📂 <subcategory caption>	caption=acorp	📄 category	☑	
📄 <article descr price1 price	descr=Acorp 7KTA / K7,...	📄 article		
📄 <article descr price1 price	descr=...	📄 article		
📄 <article descr price1 price	descr=...	📄 article		
📂 <subcategory caption>	caption="asustek"	📄 category	☐	
📄 <article descr price1 price	descr="Asus CUR-DLS ...	📄 article		
📂 <category caption>	caption="processors"		☐	
📂 <subcategory caption>	caption="Intel"	category ▼	☐	
📄 <article descr price1 price	descr="Pentium-III XEO...			
📄 <article descr price1 price	...			
📂 <subcategory caption>	...	📄 category		
📄 <article descr price1 price	...			
📄 <article descr price1 price	...			

Parent Category Rules

Type	Condition	Action	
Parent	article.descr contains "pentium"	Add element <processor> with value "Pentium"	
Own	article.descr contains "pentium"	Add element <processor> with value "Pentium"	...

Create rules (conditions & actions) for semantic mapping

Enrich subscriber catalog from master catalog repository

Select Property Wizard - Step1

Step 1
Choose article to get list of available property

Property Filters

Search Properties to Set Filter On

Apply	Property Name	Filter Type	Filter Value
☑	item_name		
☑	brand		Intel

cou

Set filter   Clear all filters

🔍 Search Catalog

Total Condition

Catalog item category is ' Catalog / Inventory goods / Technics / Computers / CPUs'
Brand is 'Intel'

Category Filter ☑

- ☐ Catalog
  - ☐ Services
  - ☐ Digital goods
  - ☑ Inventory goods
    - ☐ Food
    - ☑ Technics
      - ☑ Computers
        - ☑ CPUs
        - ☐ Motherboards
        - ☐ Memory
        - ☐ Monitors
        - ☐ HDD

Search Results

SKU	Catalog Category	Item Description
33218	Celeron 800 FCPGA BOX 128k 100M...	Catalog / Inventory goods ...
33219	Pentium-III XEON 550 512k MMX	Catalog / Inventory goods ...
33221	Pentium-4 1,5 GHz, S423	Catalog / Inventory goods ...
33222	Pentium 233 MMX Socket7 66MHz	Catalog / Inventory goods ...
22io-uuy01	Pentium-II 266 SECC 512k 100MHz S...	Catalog / Inventory goods ...

5 Items Found   Show top 1000 items

Next >>   Close

Rule Editor

Condition | Action

○ Substitute description from Ca

Intel Celeron Cooperman 800 E

Select Product ...

● Enrich product description

Property   Valu
brand   Inte

Repository Wizard ...

List of enriching properties:
brand   in
<new>

OK   Cancel

Add properties from repository to enrich subscriber catalog

Rule Editor

Condition | Action

○ Substitute description from Catalog Repository

Intel Celeron Cooperman 800 EAX ....

Select Product ...

◉ Enrich product description

Property	Value:
brand	Intel

Repository Wizard ...

List of enriching properties:

brand	intel
<new>	

Select Property Wizard - Step 2

Step 2

Chosen article:

Intel Celeron Cooperman 800 EAX ....

Select property & value

Avalable Properties:

Brand	Intel
Model	Celeron
Weight	150 g.

>
<
>>
<<

Chosen Properies:

Model code	FCPGA
Frequency	800
Cash L1	16K+16K
Cash L2	128K
Base Frequency	66MHz
Multiply	12
Voltage	2V
Technology	0,25 mk
Picture	

< Back | Finish | Cancel
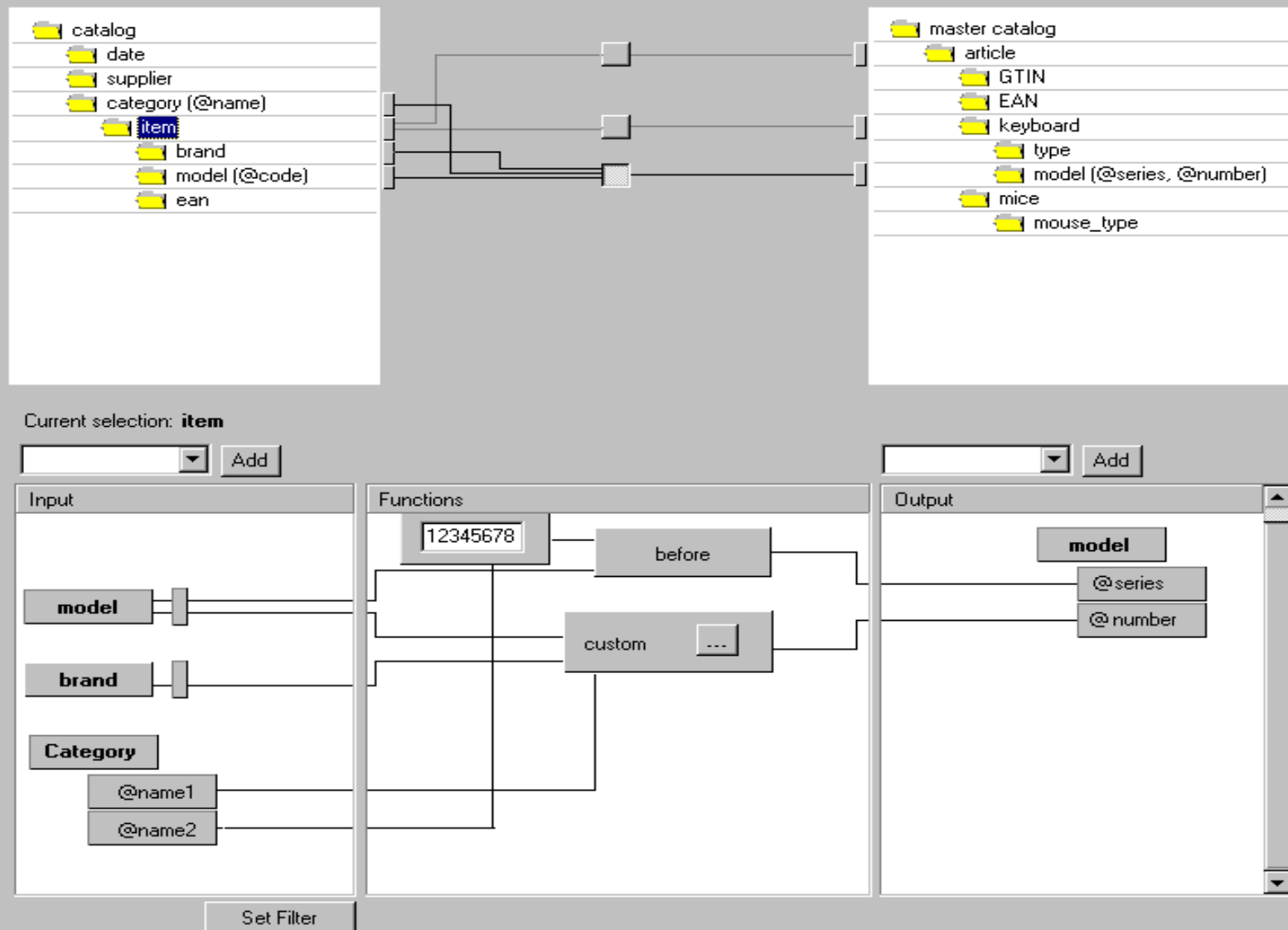
Track and handle catalog upload errors

Catalog Integrator

Catalog Integrator: information exchange system
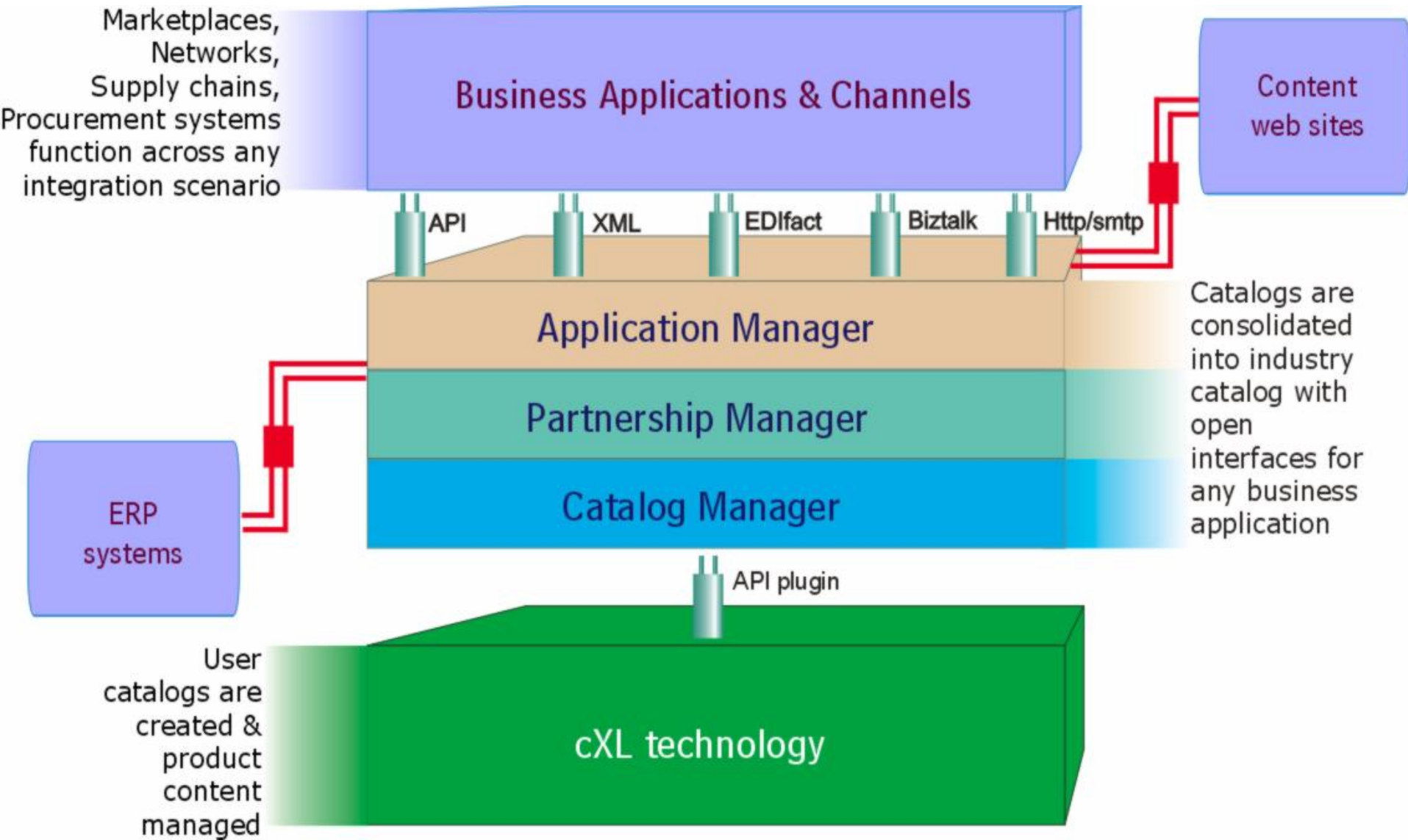
cXL® browser based transport channel integrates critical mass of participants because it does not require any customization of ERP systems

engines :
- transaction engine
- CRM engine, customer service and support
- report engine
- Web-site customization engine
- Security subsystem
- Online order processing service
- Language engine
...

Standard catalog online (via catalog aggregator)

User ERP catalog (incompatible)

Internal XML messaging system :
Converter
XML <-> Any supported format

formats:
XML
cXML
xCBL
...

browser transport
HTTP
HTTPS

protocols transport
HTTP
HTTPS
SMTP
FTP
...

customized transport
HTTP

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)

back

forward

Architecture

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

Online business process designer

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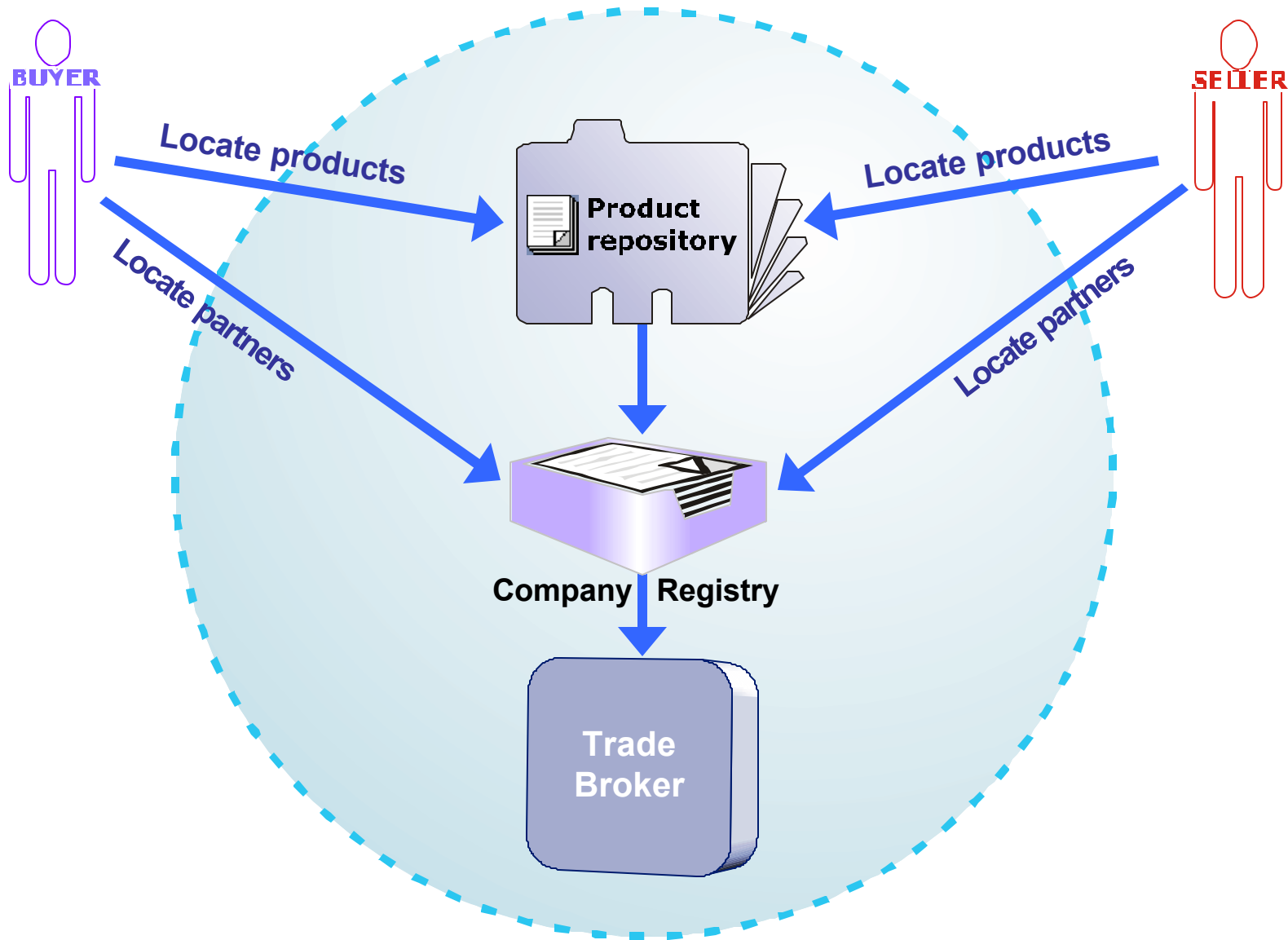- requires mediator process with static and dynamic model mapping

User1 Offline "ERP" System

Integration module

User1 Online System

User1 Online Workflow Engine

User1 Online "ERP" Applications

User1 mediator
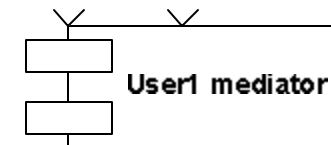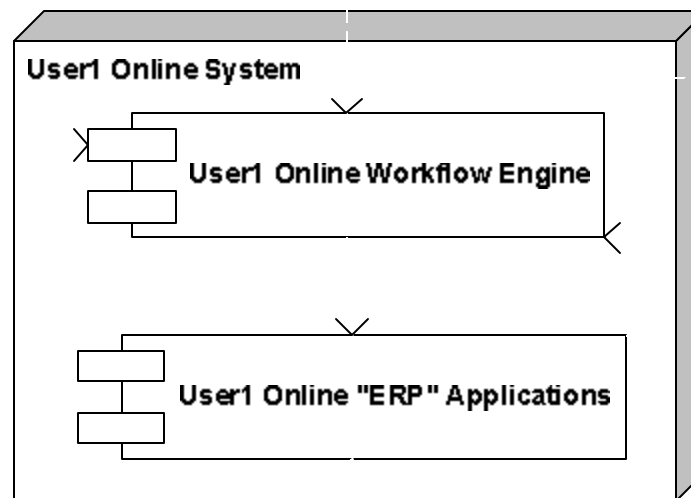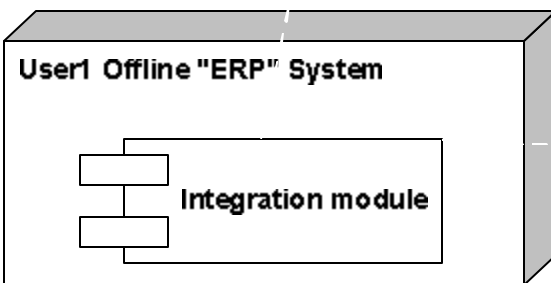
to User2

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

BUYER

SELLER

Locate products

Locate products

Locate partners

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

Autoteknet: Search for autoparts. - Microsoft Internet Explorer

Address http://www.autoteknet.com/tour/Autoteknet_Search_for_autoparts62.htm

File Edit View Favorites Tools

Select currency:
BEF [>>]

SKU# search:
6DF 007 361-001 [>>]

VIN search:
[>>]

Select brand:
[>>]

Production year
[>>]

Engine capacity
[litr] [>>]

Vehicle trademark

Passenger cars
-Equipment/Accessories
-Chassis
-Drive
-Body
-Electrics

found 3, shown 1 - 3

SKU#	Description	Brand	APC	City	Price	Action
6DF 007 361-001	STOPLIGHT SWITCH	HELLA	Auto Superieur S.A.	Paris	* 141.11 EUR (5,644.51 BEF)	>>>>[Add] / [View]
6DF 007 361-001	STOPLIGHT SWITCH	HELLA	Firenze Motors	Turin	* 421,200.00 ITL (8,760.96 BEF)	[Add] / [View]
6DF 007 361-001	STOPLIGHT SWITCH	HELLA	Best Auto Parts	London	* 144.55 GBP (9,540.02 BEF)	[Add] / [View]

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

Reset compare list

FULL SKU INFO
SKU#: 0 344 101 044
Description: Low-oil-pressure indic. switch
Other info: 06/83 Low-oil-pressure indic. switch
Brand: BOSCH
Price: 162.78 GBP
Delivery info: 5 days
Warranty info: 2 years
Notes: Compatible with 684 3e33 333 and 6DF 007 361-001
Discounts: Club members:
Price: 154.09 GBP
Compatible vehicles: See full list of compatible vehicles (146)

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

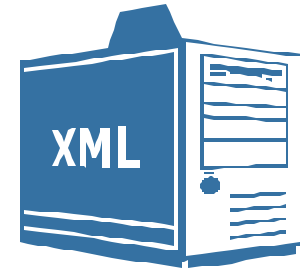**ERP system with XML interface**

XML
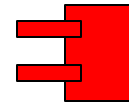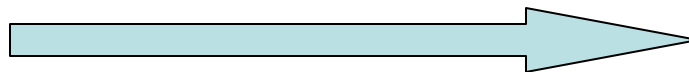
ERP integration between Tier 1 companies requires exchange protocol

ERP system with XML interface

XML

ERP system with XML interface

XML
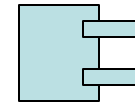
ERP integration with SME's requires costly customized adaptor

XML

ERP system without XML interface

ERP system with XML interface

XML

ERP integration with SME web sites is unaffordable
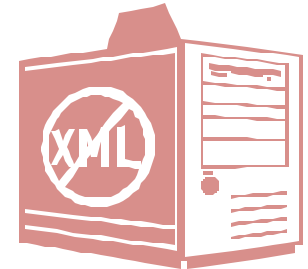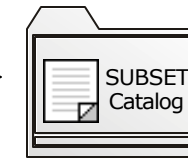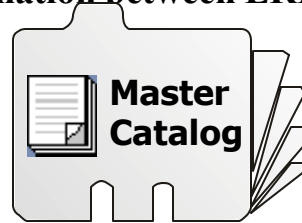
Web sites & content servers

CBS delivers low cost & fast integration of SME's into any business environment no matter the partner's IT capabilities

ERP system with XML interface

cXL maps partner catalogs to exchange information between ERP systems

XML

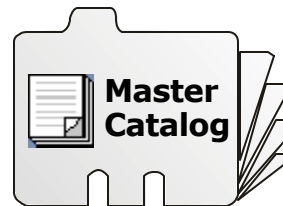**Master Catalog**

SUBSET Catalog

XML

ERP system without XML interface

ERP system with XML interface

cXL maps partner catalogs to exchange information between ERP & web sites

Web sites & content servers

XML

Master Catalog

SUBSET Catalog

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

ERP system with XML interface

Web sites & content servers

Internet Gateway via HTTP

XML output

HTML/browser input

XML input

HTML/browser output

Cyscom Biznet Services

HTTP, FTP & SMTP output

Output protocols

HTTP, FTP & SMTP input

Input protocols

ERP system without XML interface

ERP with other protocols (EDI, Rosetta Net…)

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