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Business Information Systems Unit 6 Content Integration and Electronic Procurement

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What *is* e-Procurement?



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- The business-to-business purchase and sale of supplies and services through the Internet as well as other information and networking systems, such as electronic data interchange (EDI) and Enterprise Resource Planning (ERP). An important part of many B2B sites, e-procurement is also sometimes referred to by other terms, such as supplier exchange.
- Typically, e-procurement Web sites allow qualified and registered users to look for buyers or sellers of goods and services. Depending on the approach, buyers or sellers may specify prices or invite bids. Transactions can be initiated and completed. Ongoing purchases may qualify customers for volume discounts or special offers.
- E-procurement software may make it possible to **automate** some buying and selling. Companies participating expect to be able to control parts inventories more effectively, reduce purchasing agent overhead, and improve manufacturing cycles.

cf: Wikipedia



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U.S. Department of Labor
E-Procurement

Item Cost Distribution: Specify percentages (totaling 100%) of the item's price between selected Cost Centers.

Item Attachments | Item Cost Distribution | Item Details

Save | Cancel | Apply Percentage Distribution to All Items in the Shopping Cart

Quantity/Unit	Item Description	Manufacturer	Supplier	Supplier Part Number	Unit Price (USD)	Total (USD)
1 EA	Furniture and carpet for phase 6 of HRC space renovation	KORNALL	INTERNATIONAL		\$15,000.00	\$15,000.00

Distribute Evenly | Recalculate

Cost Center	Percentage	Quantity	Amount
F0635YBU-2003-2591-24000-000 -	100.0000	1.0000	15000.0000

Shopping Cart Name: Nevada Butler/COA | Creation Date: July 8, 2003 | Item Count: 1 | Total (USD): \$15,000.00

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Why e-Procurement?

- Centralizes purchasing:
 - High overhead per item
 - Slow
- Decentralized Purchasing (Maverick-Purchasing)
 - Loss of bargaining power and economies of scale

↓

Combine the best of both worlds

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e-Procurement: Status Quo



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- BME Global Sourcing Portal
 - www.supply-markets.com
- Europe leading in supplier integration



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Promising e-Procurement Tasks



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- Search for suppliers
- Vendor selection
- Order planning
- Purchasing rules
- Customs handling

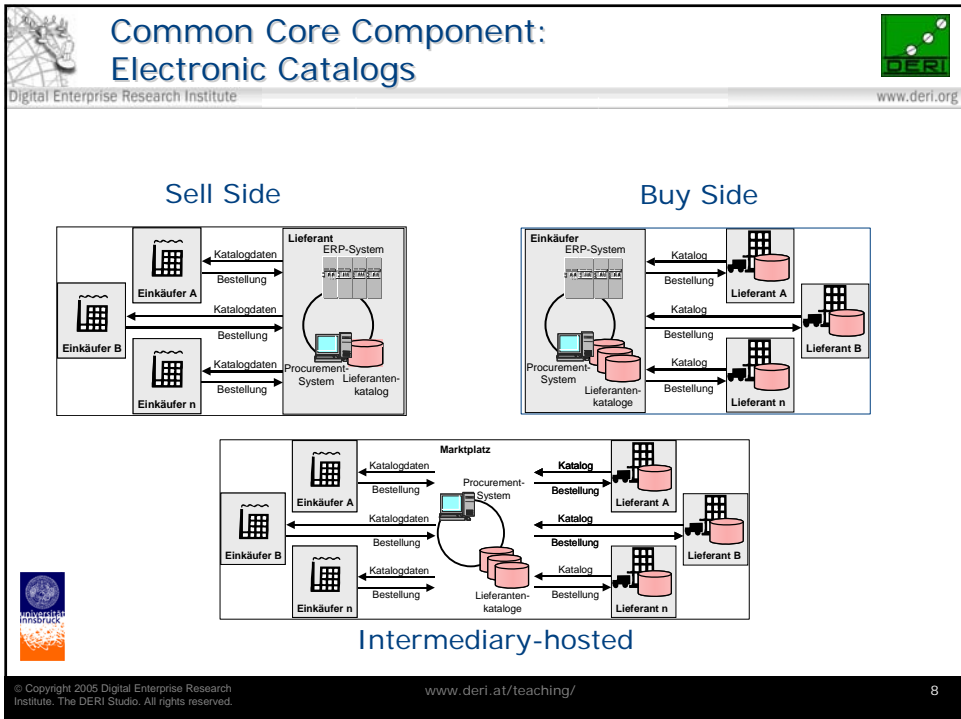
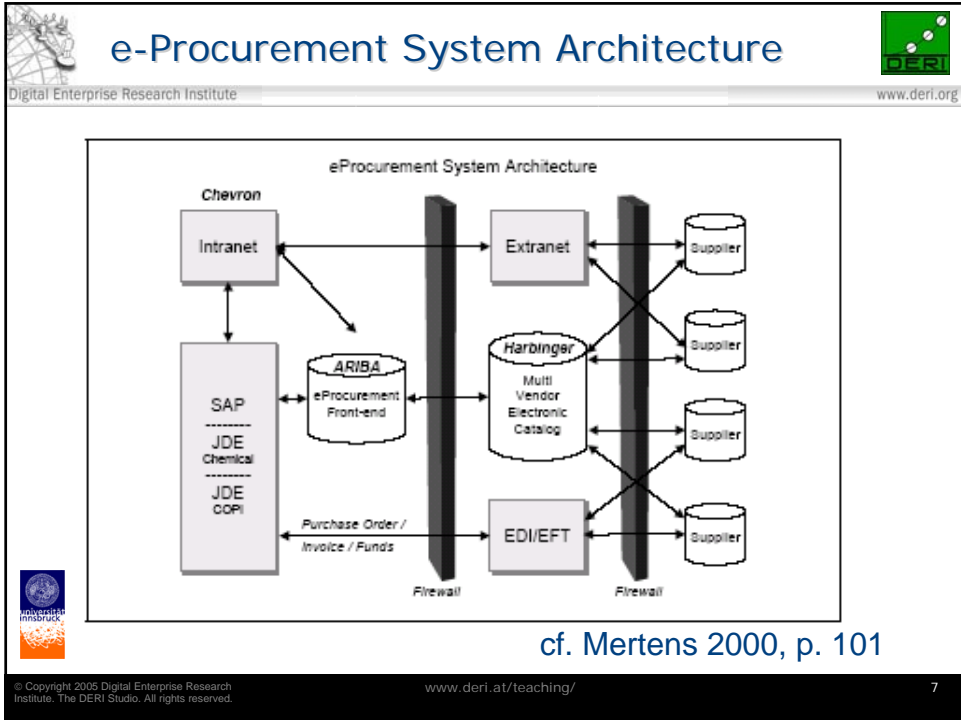
(Mertens 2000, pp. 78-111)





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 **Price-finding Mechanisms** 

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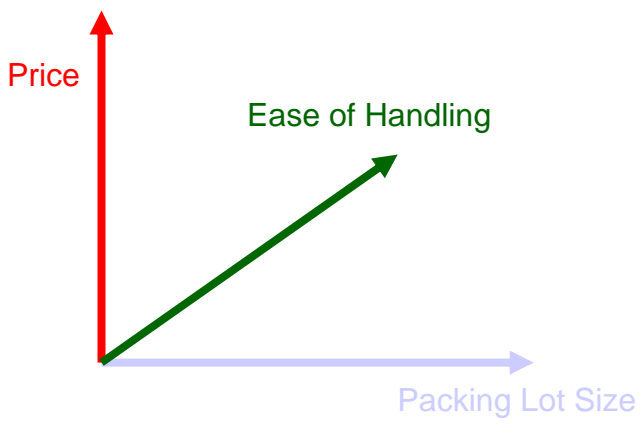
- List prices
- Auctioning
 - e.g. as in e-bay
- Reverse Auctions
- Tendering
 - especially in the public sector




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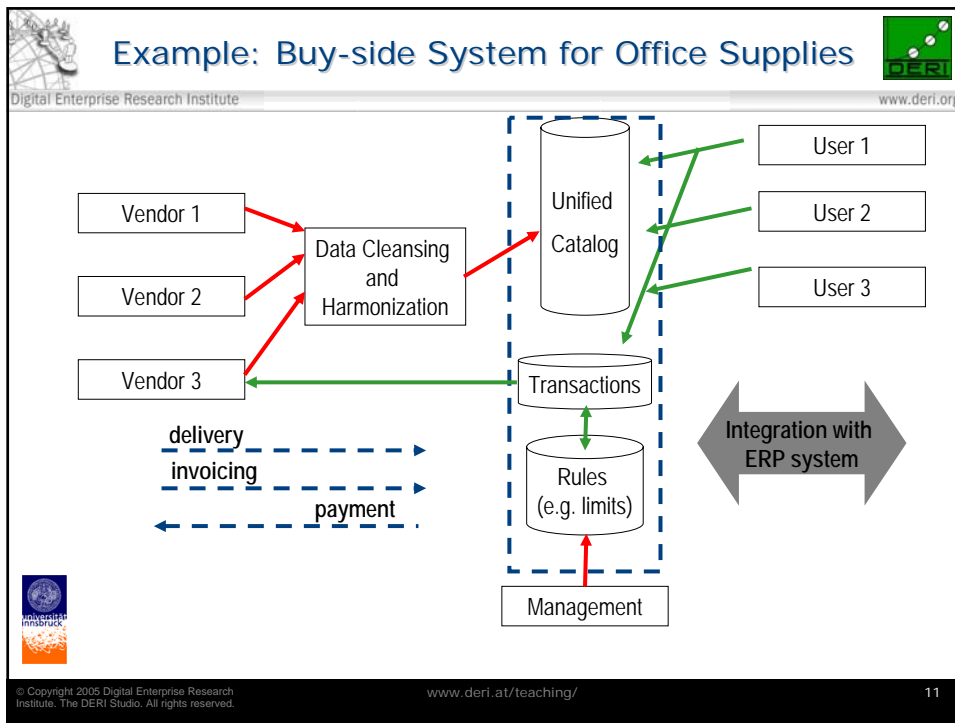
 **Multi-dimensional Bidding** 

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Part 2 Content Integration


The slide features a background image of a modern building's glass facade. In the top left corner is the logo for 'universität innsbruck'. In the top right corner is the logo for 'DERI'. The main text 'Part 2 Content Integration' is centered in a white box. At the bottom, there is a footer with copyright information and a URL.

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 **Content Integration** 

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- The task of integrating data from multiple sources into a consistent target data collection.
- Examples
 - Catalog data integration
 - spend analysis
- Characteristics
 - highly operational
 - many sources, many targets
 - heterogeneity in structure and semantics very frequent
- Two approaches
 - Standardization
 - Integration



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 **Data Exchange with XML** 

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```
graph LR; A[Application A] --> XML[XML Document]; XML --> B[Application B]
```

Good foundation for **common** and **lasting** exchange formats!



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Using XML Grammars as Interface Specifications



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- For requirements specifications,
- Service-level agreements,
- Legal documents,
- etc.



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XML and CAD



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- DesignXML
 - www.designxml.org
 - Autodesk Initiative
 - supported by AutoCAD 2002, but not yet widely in use.
- aecXML
 - International Alliance for Interoperability (IAI)
 - <http://www.iai-na.org/aecxml/mission.php>



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Countless XML Initiatives


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Accounting (11)	Energy/Utilities (23)	Religion
Advertising (6)	Environmental (1)	Retail (6)
Aerospace (24)	Healthcare (15)	Robotics/AI (5)
Agriculture (3)	Human Resources (23)	Science (59)
Arts/Entertainment (25)	Industrial Control (3)	Security (1)
Astronomy (14)	Insurance (6)	Software (82)
Automotive (12)	Internet/Web (25)	Supply Chain (23)
Banking (11)	Legal (10)	Telecommunications (24)
Biology (4)	Literature (14)	Translation (7)
Business Services (3)	Manufacturing (4)	Transportation (8)
Catalogs (9)	Marketing/PR	Travel (3)
Chemistry (3)	Math/Data (1)	Waste Management
Computer (8)	Mining (10)	Weather (6)
Construction (10)	Multimedia (24)	Wholesale
Consulting (17)	News (10)	
Customer Relation (6)	Public Service (3)	etc.
Customs (2)	Publishing/Print (28)	
Databases (8)	Real Estate (15)	
E-Commerce (56)		
EDI (18)		
ERP (4)		
Economics (2)		
Education (43)		

<http://xml.coverpages.org/xmlApplications.html>

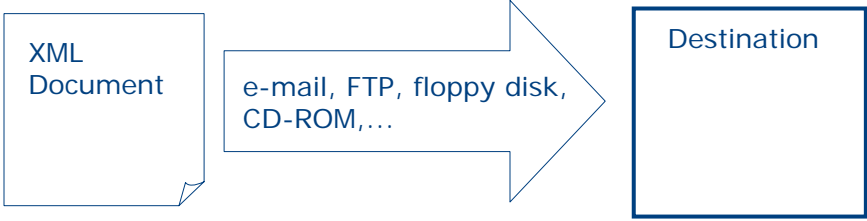


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XML Data Transmission

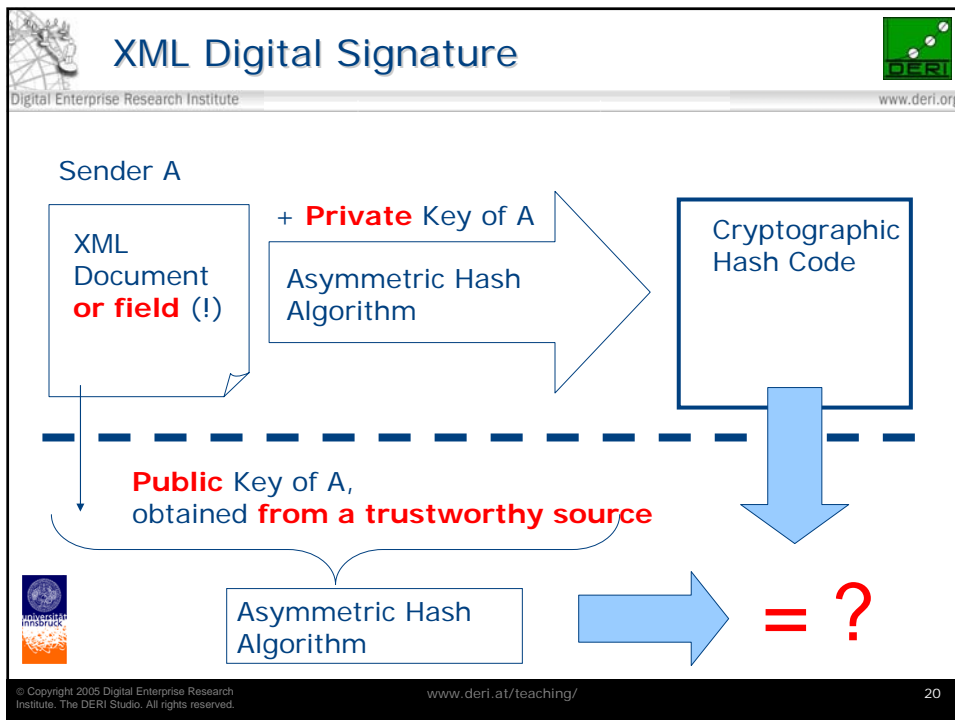
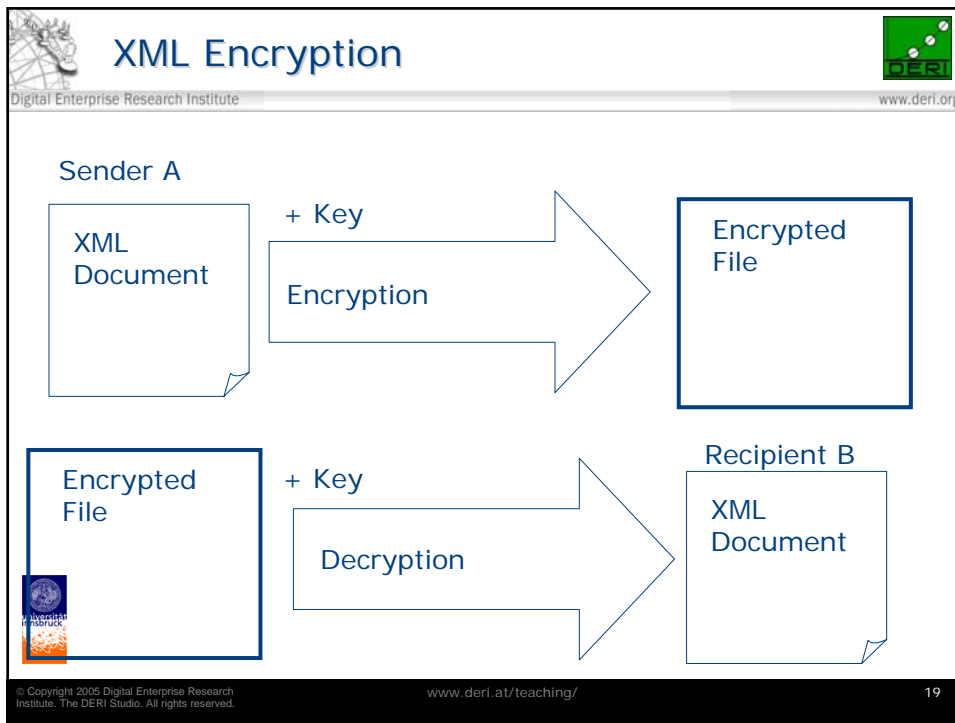
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XML documents are just files...



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Electronic Catalogs: Main Idea

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1 Lamps

1.1 Light Bulbs

a) Osram 1234 (40 W 220V)

b) Osram 1235 (75 W, 220V)

1.2 Halogen lamps

2 Lamp Bases

2.1 Indoor use

2.2 Outdoor use

PDF Printed Catalog

Web Shop

B2B Exchange

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Globetrotter Ausrüstung | Online-Shop und mehr... - Microsoft Internet Explorer von T-Online

Adresse: %2Fde%2Fhtm_shop%2Frubrik_start.php%3F3%3Flast_rubrik%3DBergsport%26rubrik%3DBergsport%26marke%3D%2525%26suchbegriff%3DSteigeisen%28%2526%28Zubeh%252FGr

WARENKORB | Online-Shop | Ratgeber | Service | Aktuelles | Kunden-Forum | Wir

GRIVEL
SWT BLANC

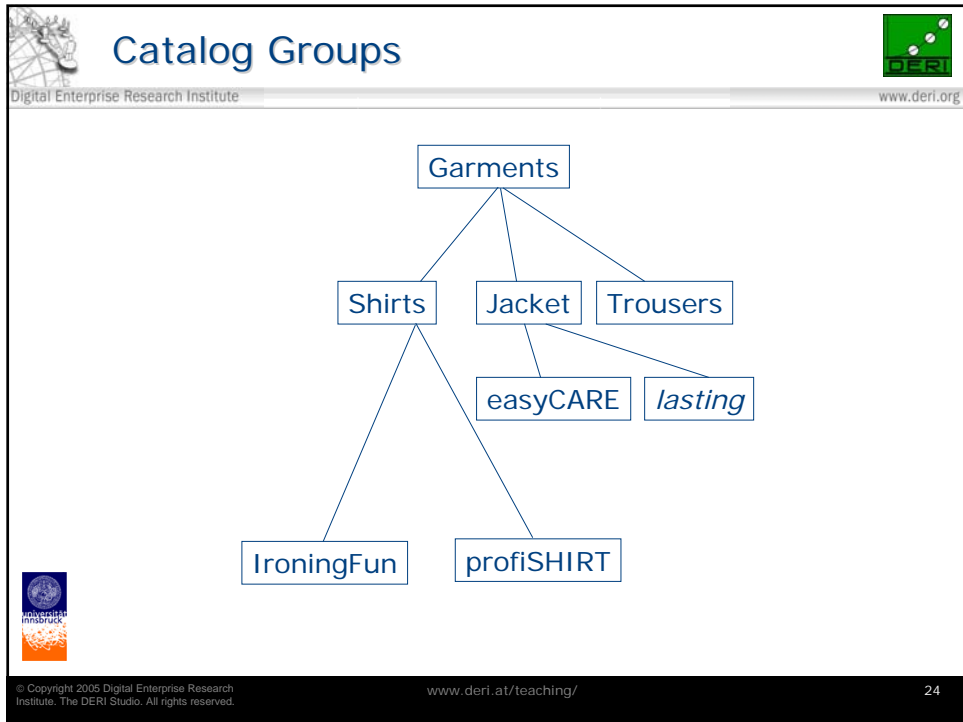
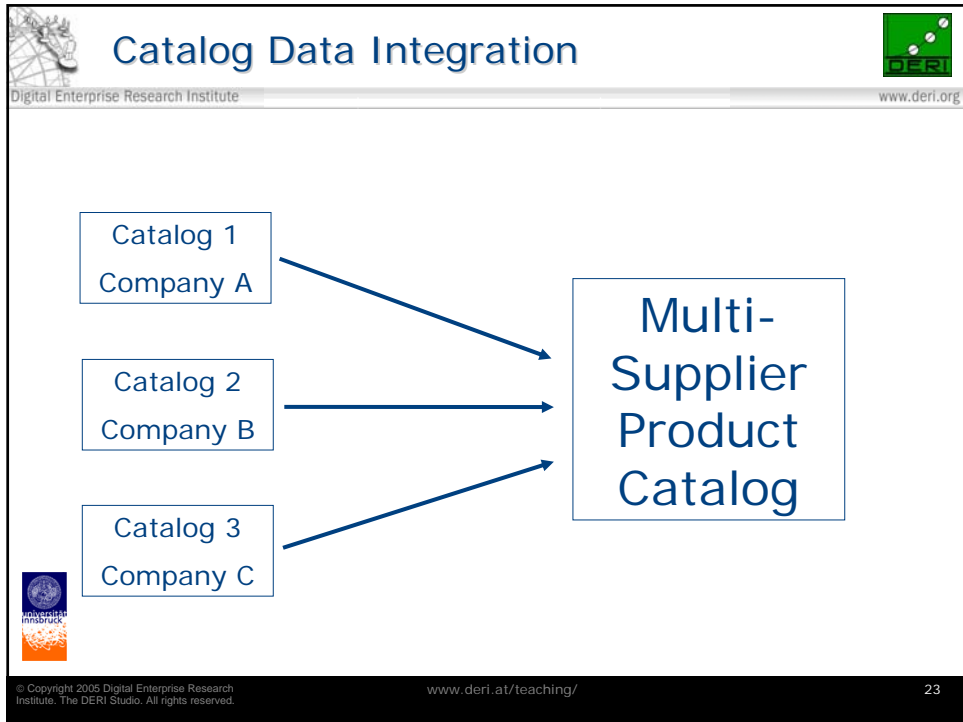
3-zackiges Eisen für leichte Hochtouren und weniger anspruchsvolle Eispassagen; gut für Anfänger geeignet. Bis Größe 46 voll verstellbar! Riemenbindung, Gewicht: 660 g/ Paar.

Durchschnittliche Bewertung: Dieser Artikel wurde noch nicht bewertet. Erste Bewertung verfassen >

Aktuelle Kalenderwoche: 09 Stand Lieferbarkeit: 26.02.2002 06:19:26

Best.Nr.:	Eigenschaft A (z.B. Farbe)	Eigenschaft B (z.B. Größe)	EUR	Seite	Lieferbar?	In den Warenkorb legen:
kb-73-101	mit Bindung		49,95	268	<input checked="" type="checkbox"/>	Anzahl: <input type="text"/> <input type="button" value="Go"/>

Labels on the right side of the screenshot: Description, Images, Variants, Prices.





BMEcat: Catalog Data Interchange Specification



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- more than 11 000 users
- massive support from German corporations
 - Alcatel, American Express, Audi, Bayer, BMW, DaimlerChrysler, Deutsche Bahn, Deutsche Telekom, Lufthansa, Mannesmann, Siemens,...
- www.bmecat.de



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BMEcat: Three Transactions



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- Complete Catalog (T_NEW_CATALOG),
- Update single products (T_UPDATE_PRODUCTS) and
- Update prices (T_UPDATE_PRICES).



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BMEcat and Catalog Data Management with SAP



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- SAP Exchange Infrastructure (SAP XI)
- Success study (no endorsement ☺)
 - http://www.all-for-e.de/projekte/mennekes_success.htm



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BMEcat: Basic Message Structure



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- **Header:** Control data, supplier, customer, relevant framework agreement
- **Transaction Data:** Product descriptions (identifier, properties, prices,...)



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Classification Schemes for Products and Services

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```

graph TD
    Fuels --> Diesel
    Fuels --> Gas
    Fuels --> Kerosene
    Diesel --> regular
    Diesel --> Biodiesel["Biodiesel (sic!)"]
    Gas --> unleaded
    Gas --> leaded
  
```

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UNSPSC

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Nummernsystem

Allgemeine Beschreibung der einzelnen Stufen

43 → Segment (Stufe 1)

43-17 → Familie (Stufe 2)

43-17-22 → Klasse (Stufe 3)

43-17-22-05 → Waren (Stufe 4)

Die ersten vier Stufen charakterisieren die vollständige Güterklassifikation

43-17-22-05-02 → Geschäftsbeziehung (Stufe 5)

Anhang einer weiteren ein- oder zweistelligen Nummer (optional bzw. wahlweise)

www.unspsc.org

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eCl@ss
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Benennung und Ordnungsmerkmale

Nummernsystem

24	Kommunikationstechnik, Bürotechnik	Sachgebiet (Stufe 1)
24-01	Hardware (Informationstechnik)	Hauptgruppe (Stufe 2)
24-01-03	Personalcomputer (Hardware)	Gruppe (Stufe 3)
24-01-03-05	Computer-Mäuse	Untergruppe (Stufe 4)

Die ersten vier Stufen charakterisieren die Güterklassifikation, weitere Merkmale können optional hinzugefügt werden.

Kennung	Merkmale
AAA001	Hersteller
AAA002	Produkt Typ
AAA252	Hersteller-Artikelnnummer
DDA018	Farbe
AAA171	Lieferant
DAA024	Bauart
CBB018	Gewicht
CBA133	Ausführungsart/Kennung
CBA102	Produktbezeichnung
AAA889	EAN Code
usw.	

Standard-Merkmaliste

www.eclass.de

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ECCMA Open Technical Dictionary (eOTD)
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EGIS
(Güterklassen-Lexikon)
n
Klasse / Merkmal
m
EGAS
(Merkmallexikon)

EGII 054891	Computer Data Service: Compact Disc Read-only Memory Mastering
EGIC 100.00140.00001	Definition: (optional)


EGII
Klassenidentifikator
(hierarchiefrei)
EGIC
(hierarchisch)

EGAI 002931	Disk Diameter
EGAC 18.02067	Definition: (optional) Datentyp


EGAI
Merkmalsidentifikator
(hierarchiefrei)
EGAC
(hierarchisch)

www.eotd.org

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openTRANS




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- BMEcat-compatible set of business documents
- www.opentrans.de



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Thank you!

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<http://www.heppnetz.de/teaching/bis>

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