Price Modeling in Standards for Electronic Product Catalogs Based on XML

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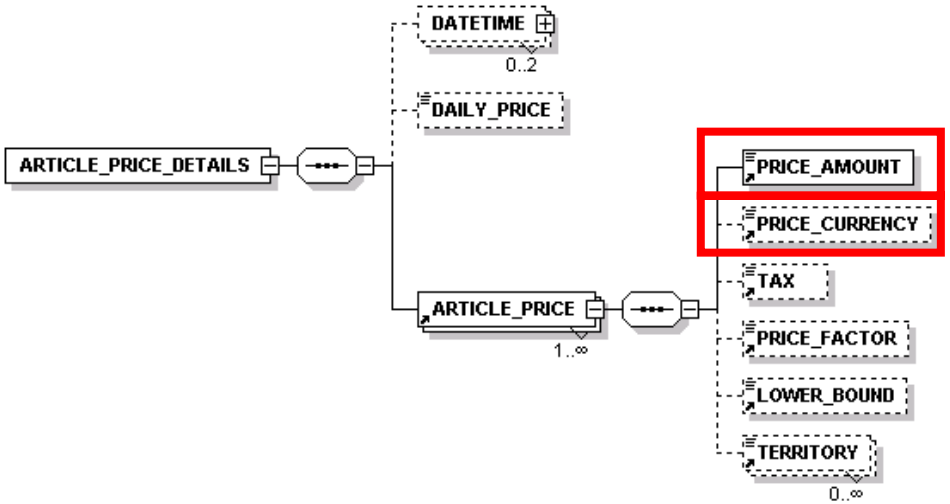
What is a „Price Model“ ?

Simple:

Amount & **Currency**

e.g. $45,00

Complex:

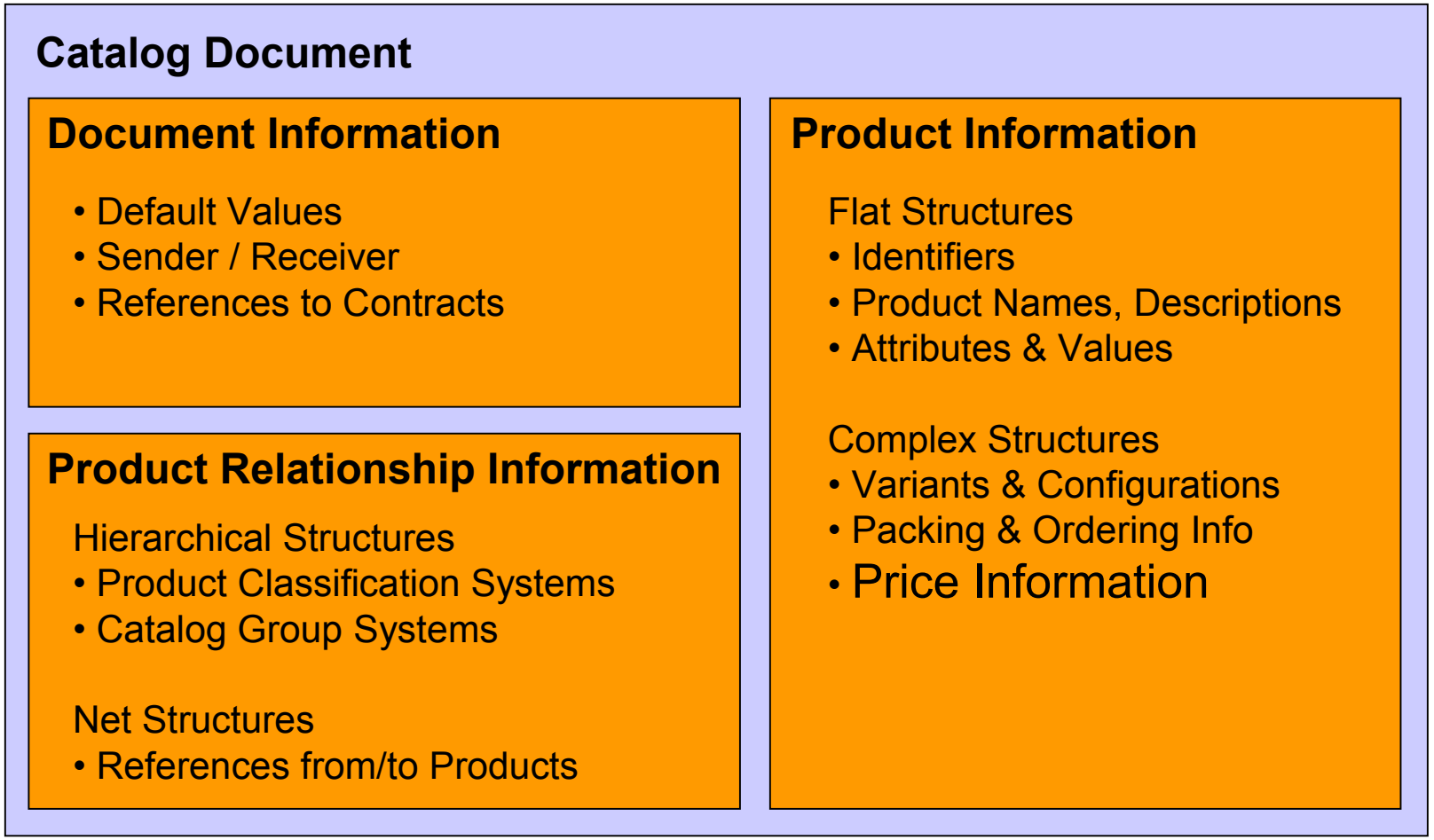


Agenda

1. Electronic Product Catalogs
2. Development of a General Price Model
3. Instruments of Pricing
4. E-Business XML Standards
5. Price Modeling
6. Conclusion

1 Electronic Product Catalogs

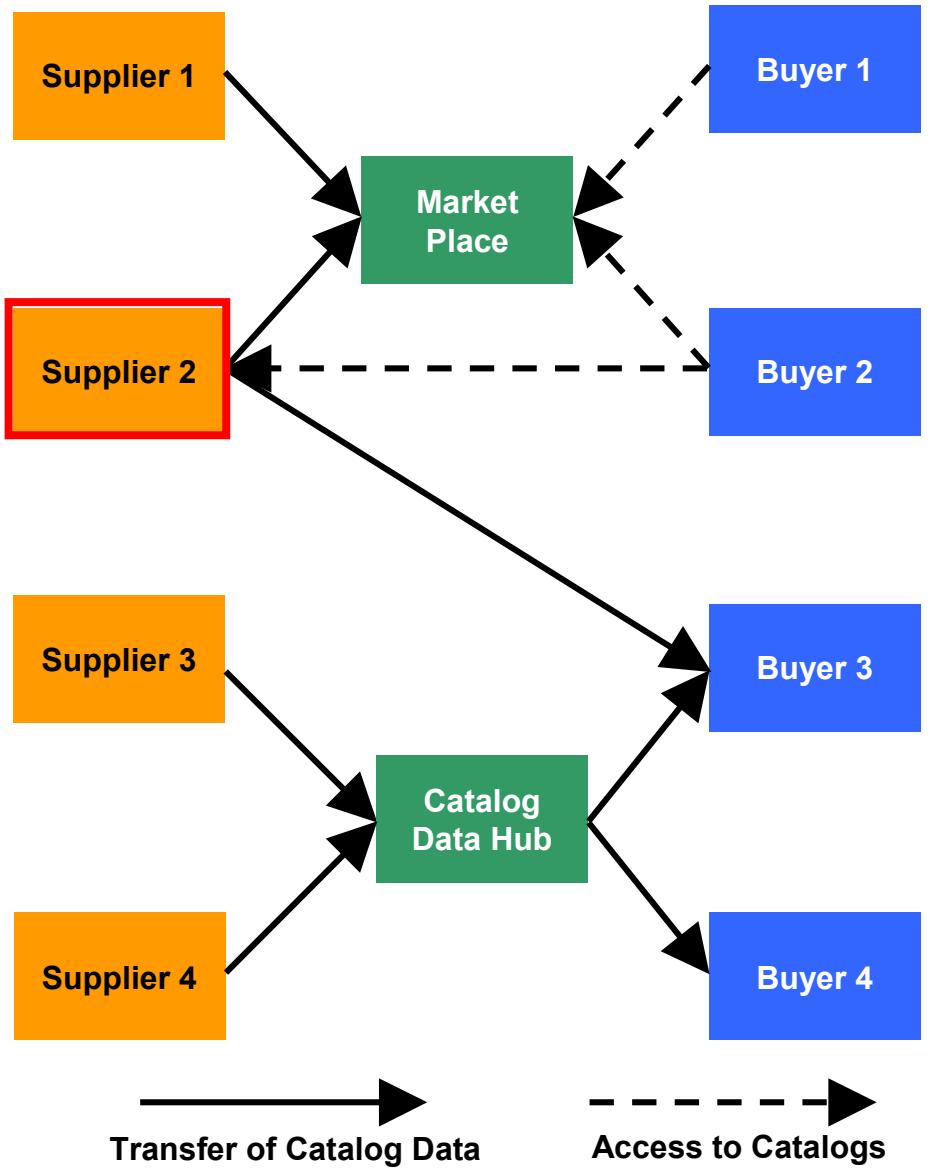
Electronic Product Catalogs are representations of information about products and services of a company.



E-Catalogs in B2B

Charakteristics:

- **Starting Point for Procurement Decisions and Order Transactions**
- **Exchange of Catalog Data**
- **Processing in Market Places and E-Procurement Systems**
- **Many XML Business Document Standards for Catalogs**
- **Large Documents (100+ MB possibly)**
- **High Degree of Customization**
- **Multi-Supplier-Catalogs**
- **Multi-Buyer-Catalogs**



Price Information in E-Catalogs

- **Differences to Paper-based Catalogs:**
  - Smaller Intervals of Update → synchronous Price Calculation
  - More complex Price Models
  - Higher Granularity of Prices
  - More Customization / Individuality

- **Determination at Build-Time:**
  - unlike Auctions, Stock Exchanges and Tenders
  - Hybrid: Price Formulas with dynamic components
    → calculable in the target systems only at run-time

- **in general:** Product-related Price Information
  → unlike E-Contracting

2. Development of a General Price Model

Motivation:

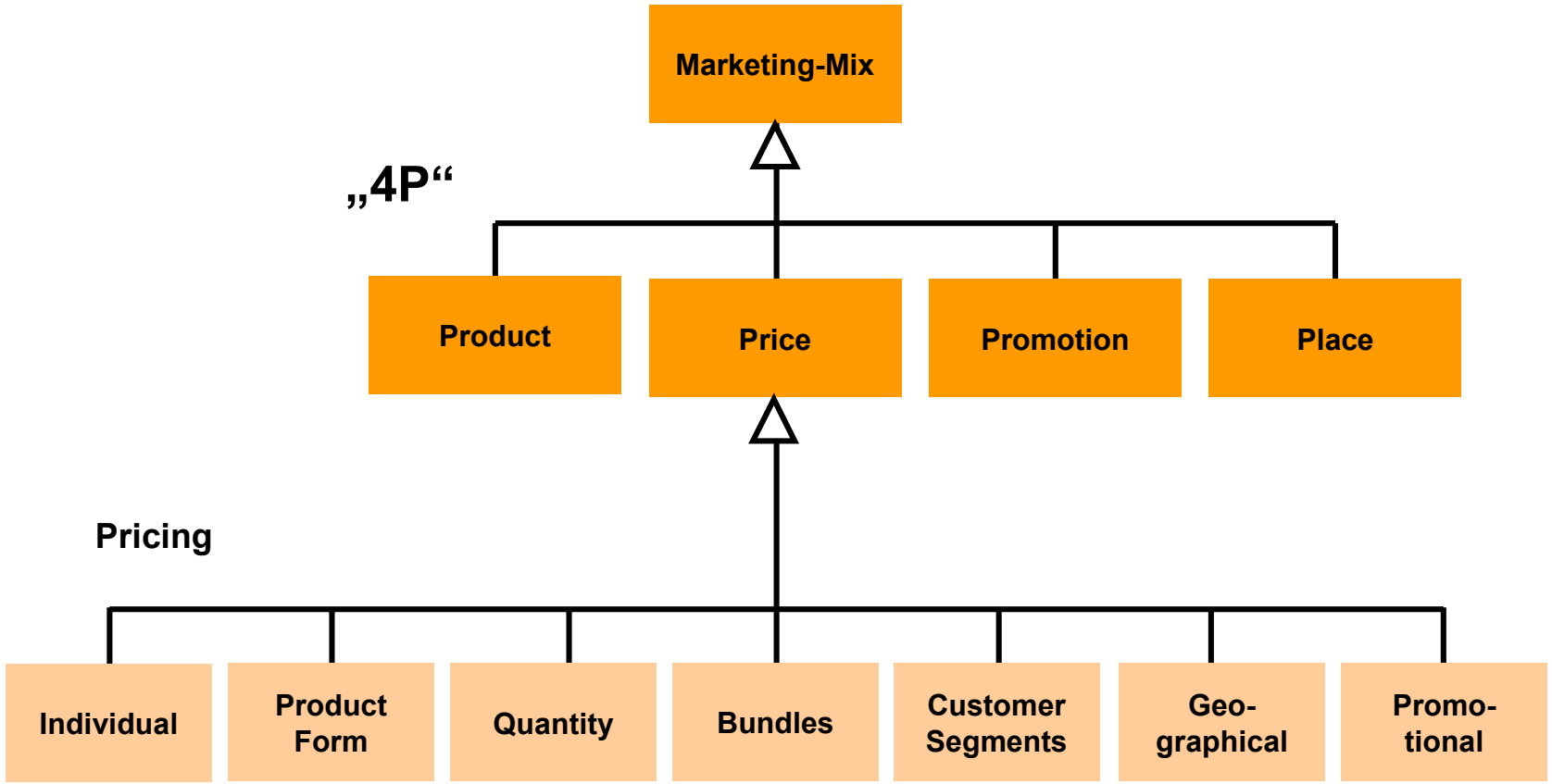
- Many B2B E-Catalog Standards
- Different Power
- Different Concepts
- Limited Price Models

→ Goals: Comparison, Evaluation, Improvement & Integration

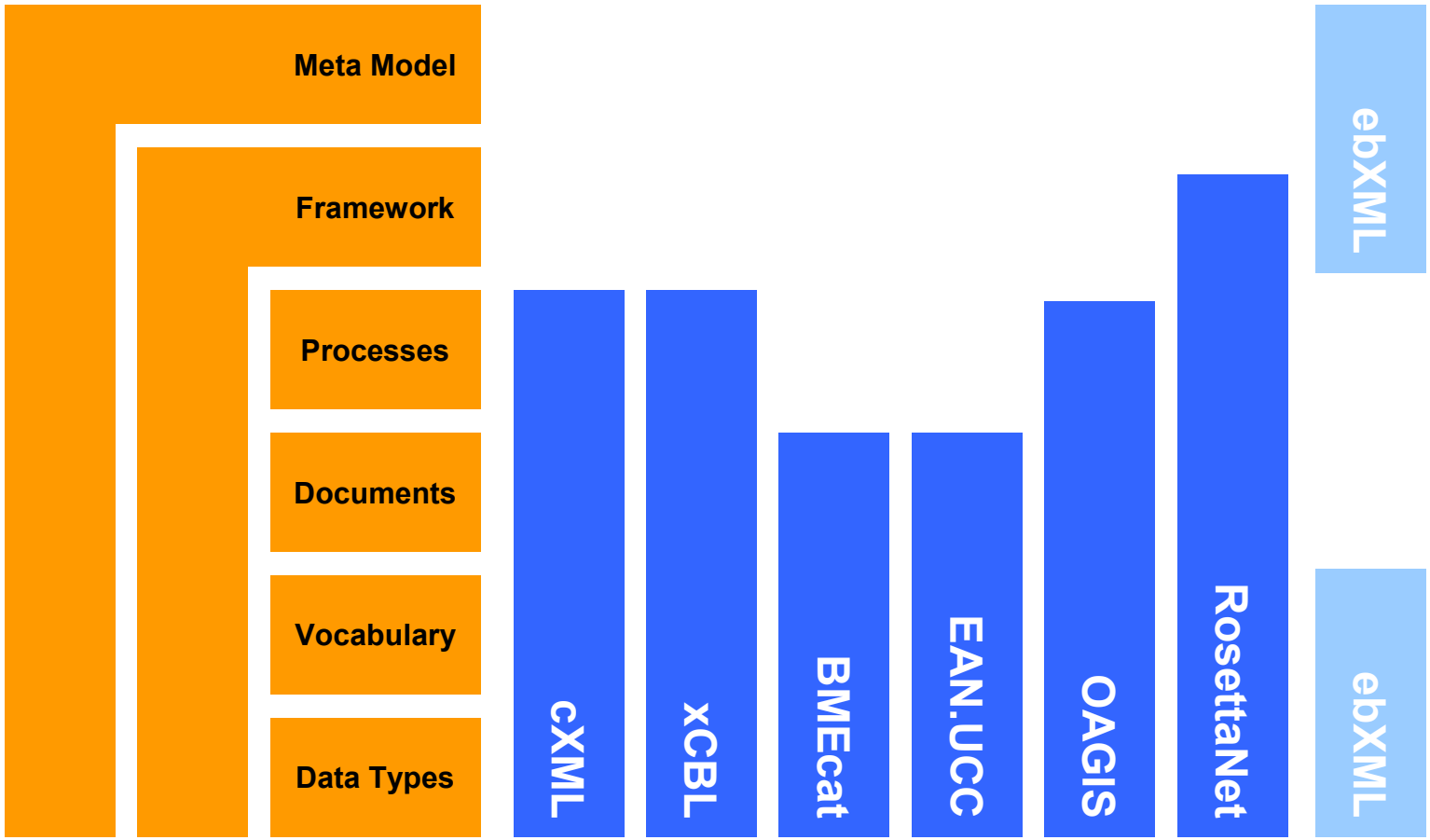
Procedure:

1. Requirements of Pricing
2. Requirements of E-Procurement
3. Empirical Analysis of E-Catalog Standards
4. Identification of Modeling Concepts
5. Modeling of Price Information using XML-Schema
6. Comparison & Evaluation of E-Catalogs

3. Instruments of Pricing

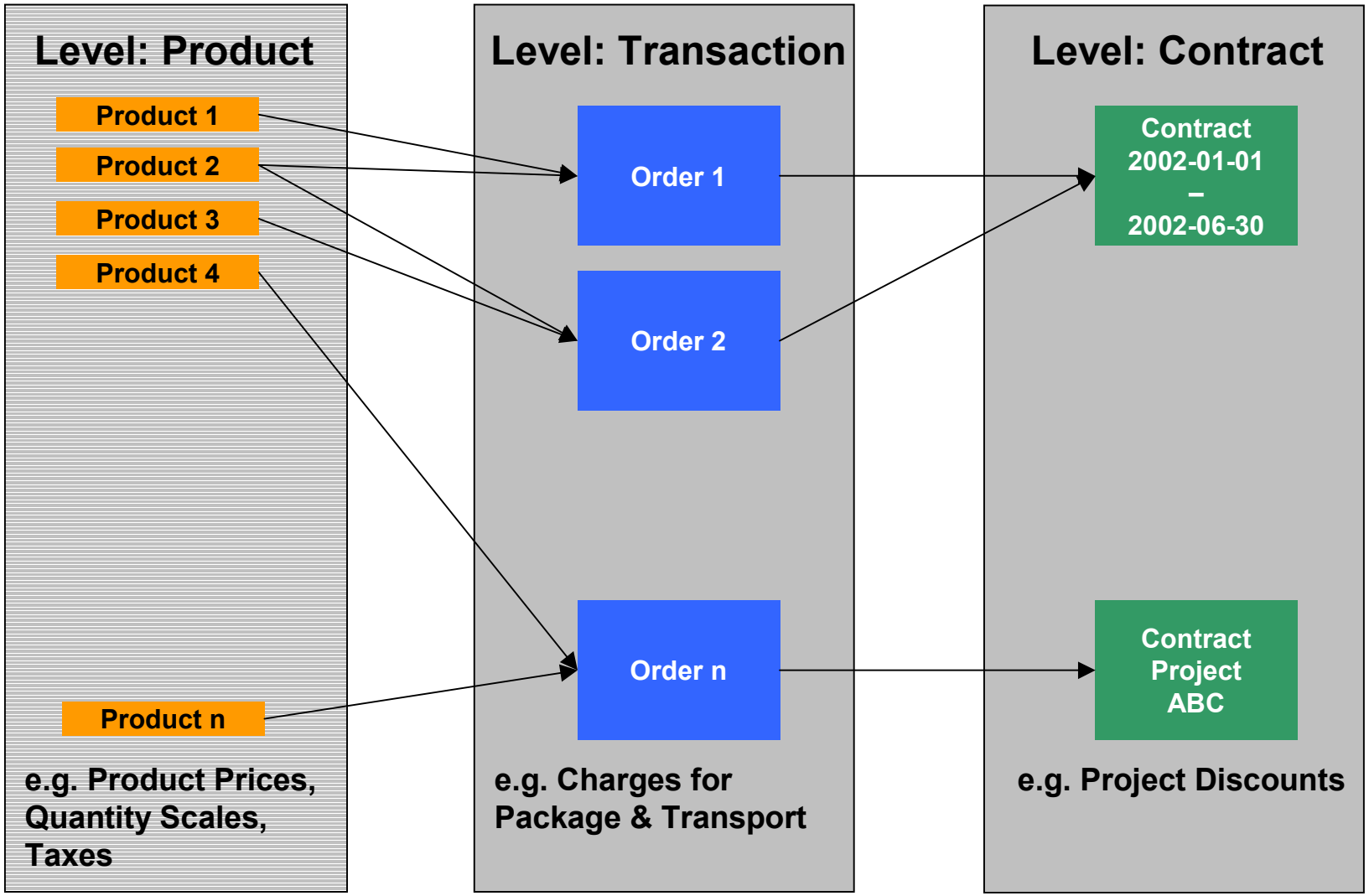


4. E-Business XML Standards



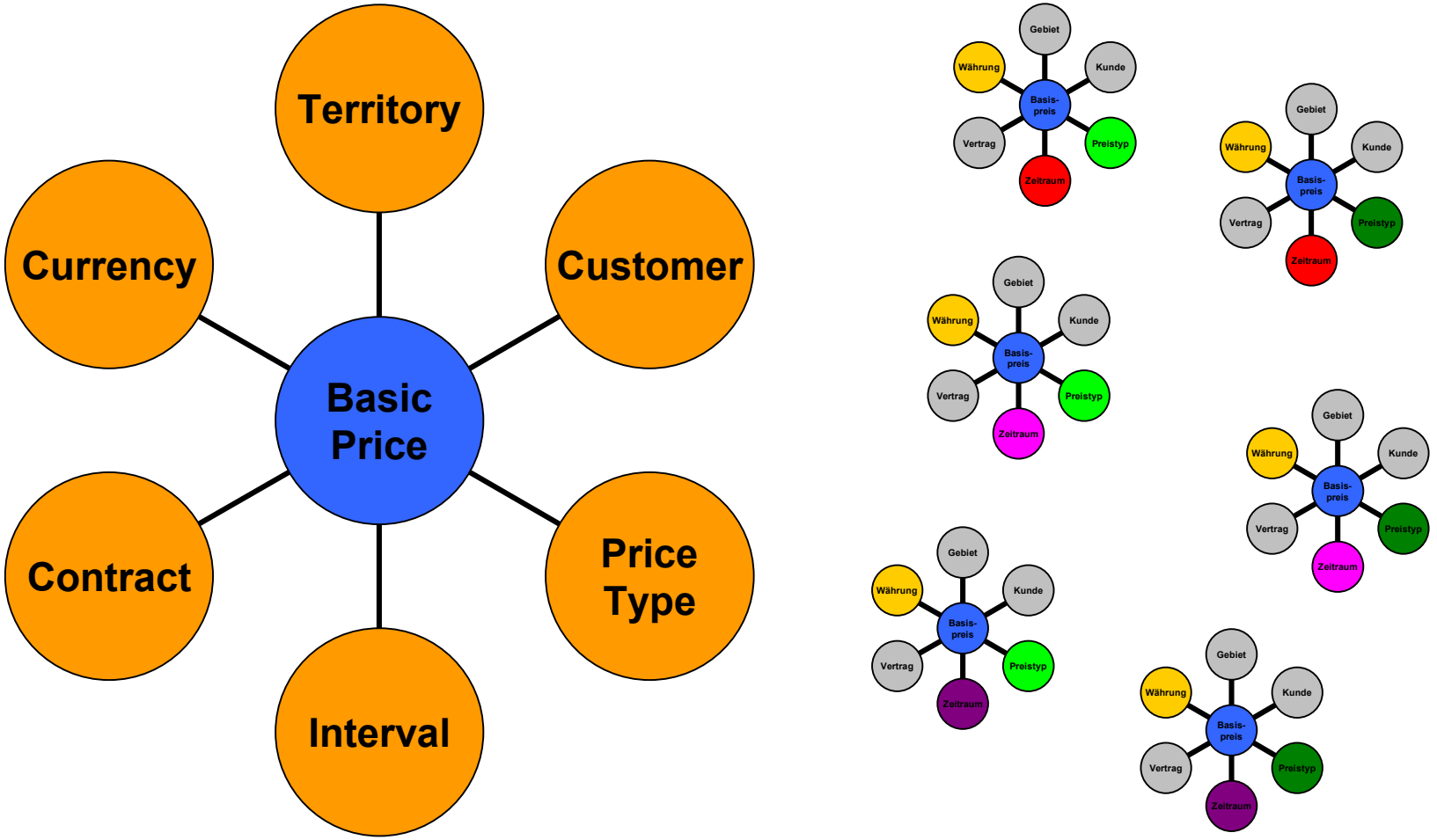
Further E-Catalog Standards: CatXML, CIDX, eCX, eCo, ECOS, OCI, OCP/OCF, OFX, PDM, PDML, PDX, Pricat, XEDI, XML/EDI, …

5. Price Modeling: Concept of Levels

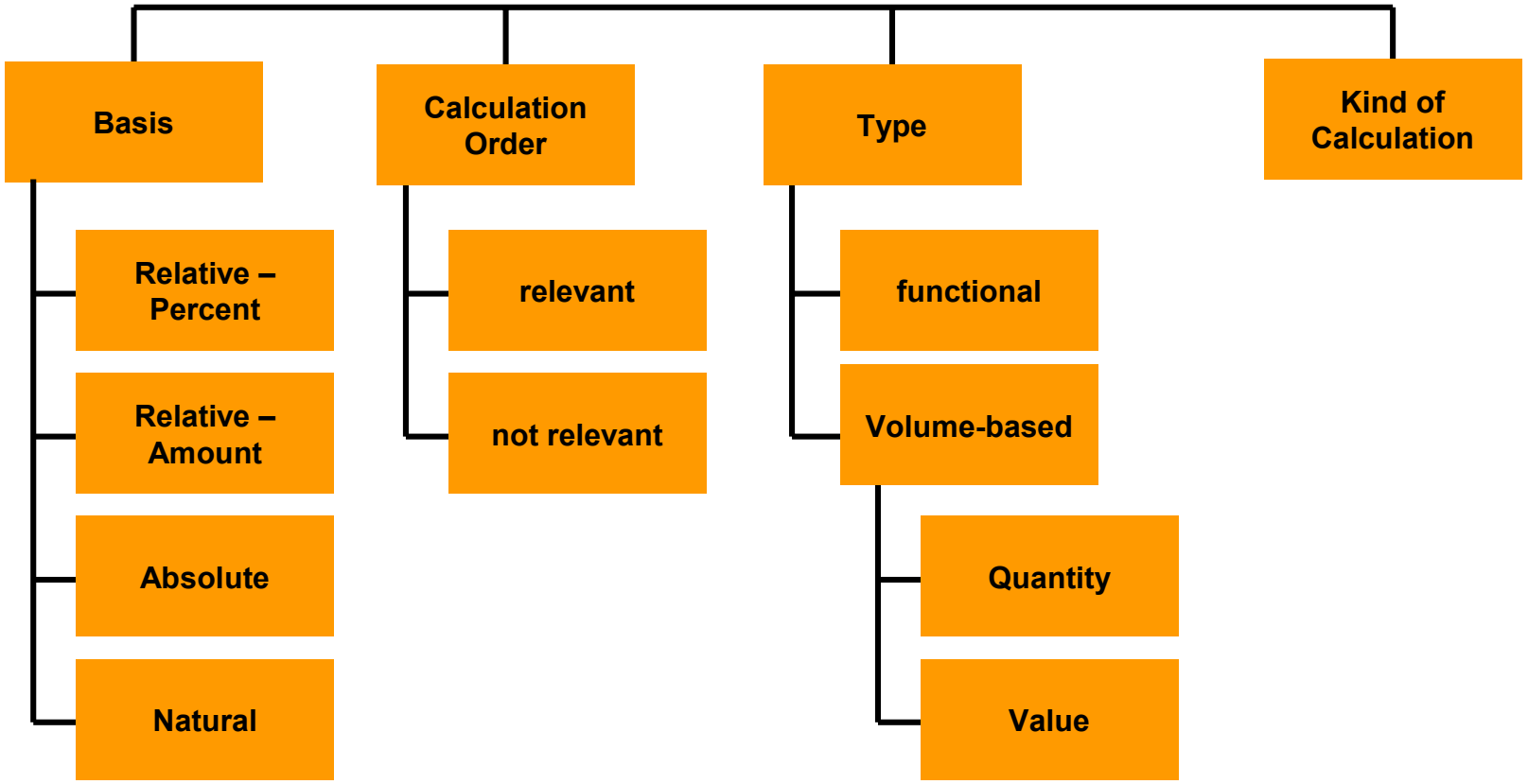


Price Modeling: Concept of Dependence

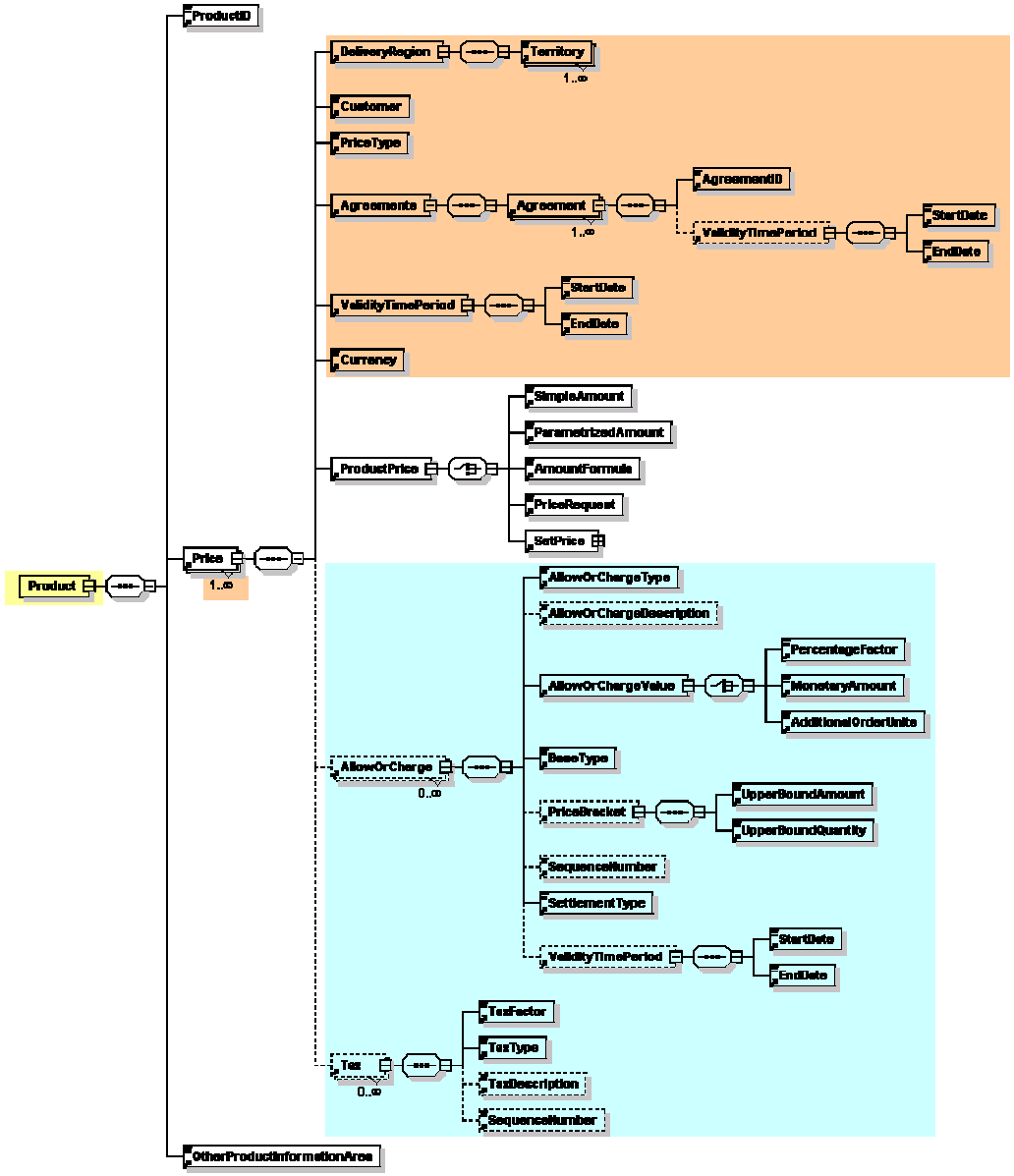
Implicit: Order Quantity and Order Unit



Price Modeling: Concept of Allowances and Charges



XML-Schema for Price Information




```
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               <xs:element ref="ValidityTimePeriod"
                    minOccurs="0"/>
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     </xs:complexType>
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     </xs:key>
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          </xs:sequence>
     </xs:complexType>
</xs:element>
```

Comparison of E-Catalog Standards

Determing Factors:

	Territory	Customer	Price Types	Interval	Contract	Currency
cXML	No	No	No	No	No	No
xCBL	No	Yes	Yes	Yes	No	Yes
BMEcat	Yes	No	Yes	Yes	No	Yes
EAN.UCC	No	No	No	Yes	No	No
OAGIS	No	Yes	Yes	No	No	No
RosettaNet	No	No	No	No	No	No

Allowances and Charges:

	Basis				Cal-cula-tion Order	Type	Scale		Kind of Calculation
	relative, percent	relative, amount	absolute	natu-ral			Quantity	Value	
cXML	-	-	-	-	-	-	-	-	-
xCBL	-	-	-	-	-	-	-	-	-
BMEcat	+	-	-	-	-	-	+	-	-
EAN.UCC	+	+	+	-	+	+	+	+	+
OAGIS	+	+	+	-	-	+	+	+	-
RosettaNet	-	-	-	-	-	-	+	+	-

6. Conclusion

- None of the selected standards covers all requirements.
- Extended product models will lead to extended price models.
- A model for price information should be part of any reference model for E-Catalogs.

→ The developed model can be used for a comparison and evaluation of B2B E-Catalog Standards.

→ The developed model is an improvement of price models in E-Catalog Standards.

→ The integration of different E-Catalog standards is reached by mapping their price models to the developed model.

Mahalo!

Any questions?

- **Oliver**
- **Jörg**
- **Volker**