



Multilingual Ontology-based Dictionary

Project “Languages for E-Commerce”

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Dictionary: Function

[Sept. 2007]

- as a glossary for the “Languages for E-Commerce” courses
- as information source for work in e-commerce environments
- as a general source for language information



Dictionary: Size & Coverage

[Sept. 2007]

Size

- DE, EN, ES all at about 1.000 entries
- additional languages under construction (FI, LV, PL, ...)
- synonyms, acronyms, grammar, collocations, translations

Coverage

- focussed on e-commerce domain
- corpus-based, manually adjusted lemma selection
- knowledge fields, situations, activities, ...



Technical Background

Dictionary

- Document Type Definition (DTD) based on previous experience in dictionary development
- XML-based data storage
- separate XML files per language
- transformation via XSLT, e. g. to Moodle Glossary

Ontology

- developed with Protégé
- uses Web Ontology Language (OWL)



Dictionary Knowledge

[Clipping from E-Commerce Dictionary]

webshop (noun)

The **online** equivalent to an **offline** shop. The webshop **owner** uses the webshop to **sell** his **products** and **services**. A webshop is based on a **catalog system** to **present products** and **prices**.

Synonyms: online shop, internet shop

Typical Usage: to visit a webshop

DE: Onlineshop

ES: tienda online



Ontological Knowledge

What's the Ontology?

- basically a network of related elements
- different types of nodes and relationships

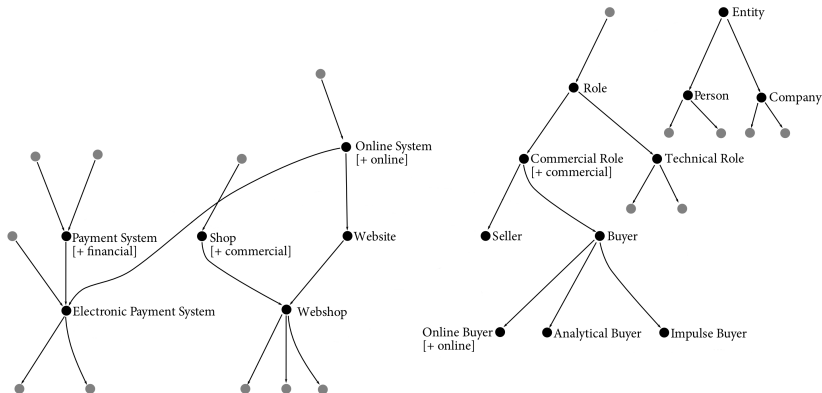
Ontology in the Dictionary

- hierarchical links, cross-links
- deductive knowledge: inference



Ontological Network

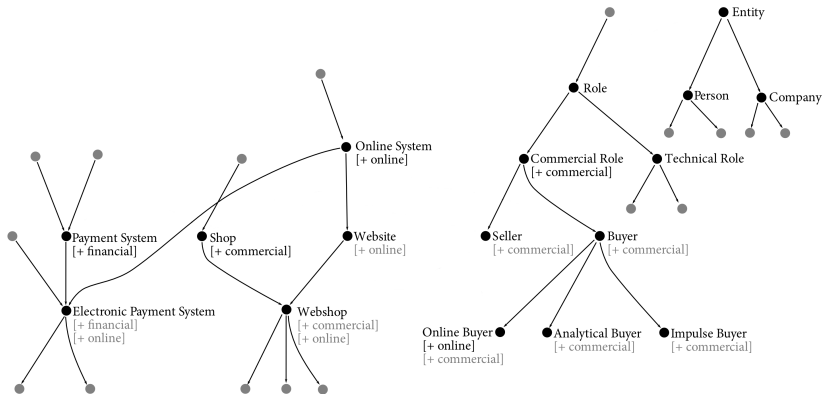
[Clipping from E-Commerce Ontology]





Ontological Network

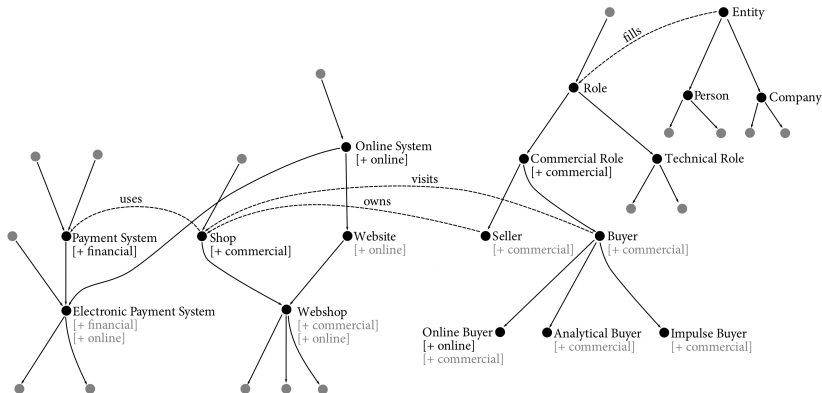
[Clipping from E-Commerce Ontology]





Ontological Network

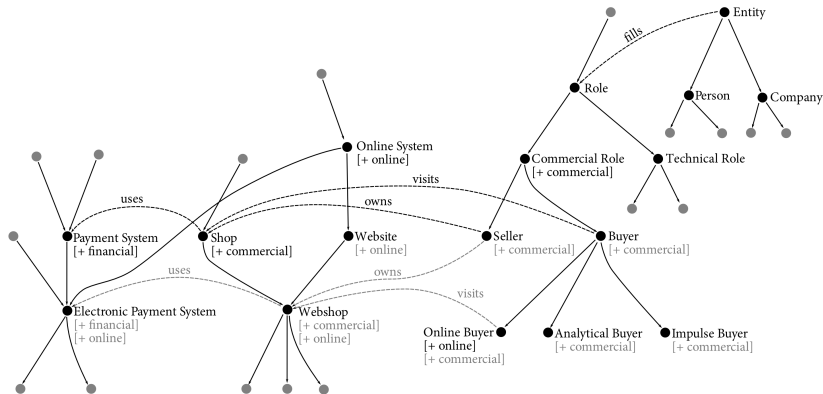
[Clipping from E-Commerce Ontology]





Ontological Network

[Clipping from E-Commerce Ontology]





Dictionary Knowledge with Ontology Support

[Grammar, Synonyms etc. left out]

webshop (noun)

The **online** equivalent to an **offline** shop. The webshop **owner** uses the webshop to **sell** his **products** and **services**. A webshop is based on a **catalog system** to **present products** and **prices**.

- *is_a* **website**, **shop**
- *uses* **electronic payment system**
- *is_owned_by* **seller**
- *is_visited_by* **online buyer**
- *has_instance* **osCommerce**



Available Tools & Data

Data

- one file per language
- available as valid XML files with DTD
- several formats: ECDict 1, ECDict 2, Moodle Glossary
- ontology in OWL format

Tools

- Transformation Scripts
- DictionaryEditor
- DictionaryViewer
- Protégé (external, MIT)



DictionaryEditor

The screenshot shows the DictionaryEditor interface in a Mozilla Firefox browser window. The browser title is "WWU/ABL: Languages for E-Commerce: DictionaryEditor - Mozilla Firefox". The address bar shows the URL "http://ife.uni-muenster.de/intranet/ec_list.php?letter=A&lang=en&edit=".

The main content area is divided into two sections, each enclosed in a dashed border. The top section is for the word "agent" and has a light green background. It contains the following information:

- Grammar:** POS-Tag: N
- Definition:** Software that acts independently from user interaction. It is autonomous and can activate itself either on its own initiative or as a reaction to something in its environment. It is possible that one agent may communicate with others in order to execute necessary actions. In the context of eCommerce, this could be the automatic processing of order transactions.
- Collocations:** to develop an agent
- Synonyms:** software agent, 007, "agent, electronic"
- Acronyms:**

The bottom section is for the word "aggregator" and has a light yellow background. It contains the following information:

- Search:** Search (G W(de) W(en) D))
- Grammar:** POS-Tag: N, Plural: normal
- Definition:** A service provider which processes and reorganizes the content of web pages and other media with the help of special software. Normally, aggregators work for special target groups and look for relevant topics and information on the internet. Thus, the users of aggregators spend less time searching for contents themselves.
- German Definition:** Ein Dienstleister, der mit Hilfe spezieller Software Inhalte aus Webseiten und sonstigen Medien aufbereitet und neu ordnet. Aggregatoren arbeiten in der Regel für spezielle Zielgruppen und suchen das Internet nach relevanten Themen und Inhalten ab. Die Nutzer eines Aggregators verwenden somit weniger Zeit damit, selbst nach Inhalten zu suchen.
- Collocations:**
- Synonyms:** news aggregator, News-Aggregator
- Acronyms:**

At the top of the yellow section, there are buttons for "Save and View" and "Save and Edit".



DictionaryViewer

[<http://lfe.uni-muenster.de/Dictionary/>]

The screenshot shows a Mozilla Firefox browser window titled "Languages for eCommerce: DictionaryViewer - Mozilla Firefox". The address bar contains the URL "http://lfe.uni-muenster.de/Dictionary/". The page content is as follows:

DictionaryViewer

Language selection:

Navigation menu (left):

- Intel Corporation
-
- [interactive marketing](#)
- [interactivity](#)
- [interface](#)
- [intermediary](#)
- [internationalisation](#)
- [Internet](#)
- [Internet addiction](#)
- [Internet address](#)
- [internet address](#)
- [internet advertising](#)
- [internet banking](#)
- [internet buyer](#)

internet advertising

Advertising via the [Internet](#). In contrast to normal [advertising](#), internet [advertising](#) enables the [customer](#) to react directly to the [advertising](#) e.g. by [clicking](#) on an [advertising banner](#). It would be the ideal case if the [customer](#) then decided to buy the product [online](#).

Ontological Information

internet advertising *is_a* [advertising](#)

Grammar

Noun

Translations

- [Internetwerbung](#)
- [Publicidad en Internet](#)

© 2004 – 2007 [Languages for eCommerce](#)

Fertig



Download & Licensing

Availability & Download

- data & tools for download & on CD
- installable & life version
- along with courses & stand-alone

Licensing

- Creative Commons for Data/ Texts
- BSD License for Software, Scripts etc.



Online Resources

Data & Tools

- <http://lfe.uni-muenster.de/Dictionary>
(open from November 2007)
- <http://lfe.uni-muenster.de/Demo>
(demo version of DictionaryEditor)

Project

- Official: <http://www.languages-for-ecommerce.com/>
- University of Münster: <http://lfe.uni-muenster.de/>



Questions?

Feel free to ask now . . . or contact us later:

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