

The Web of Data for E-Commerce in One Day

*A Hands-on Introduction to the GoodRelations Ontology,
RDFa, and Yahoo! SearchMonkey*

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Logistics

- 09:00-10:30 Overview and Motivation: Why the Web of Data is Now 15'
Quick Review of Prerequisites 15'
The GoodRelations Ontology: E-Commerce on the Web of Data 60'
- 10:30-11:00 Coffee Break
- 11:00-13:00 RDFa: Bridging the Web of Documents with the Web of Data 45'
Expressing GoodRelations in RDFa: A Running Example 30'
GoodRelations – Advanced Topics 45'
- 13:00-14:30 Lunch Break
- 14:30-16:00 Querying the Web of Data for Offerings – SPARQL 15'
Hands-on Exercise: Annotating a Web Shop 45'
Querying the Web of Data – Exercises 15'
Publishing Semantic Web Data: Make Your RDF Available 15'
- 16:00-16:30 Coffee Break
- 16:30-18:00 Yahoo SearchMonkey and Yahoo BOSS 45'
RDFa Advanced Topics 30'
Discussion, Conclusion, Feedback Round 15'

31.05.2009

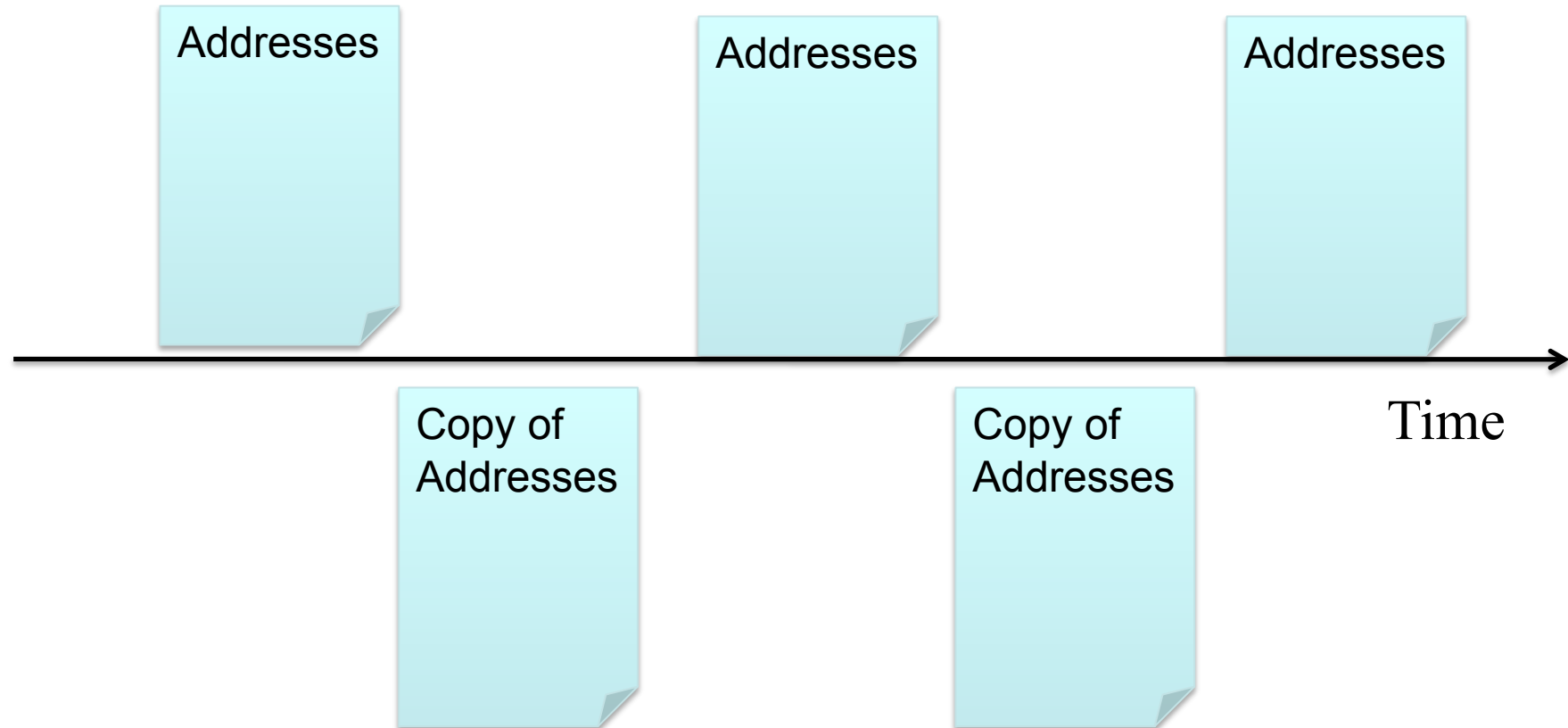
RDFa: Bridging the Web of Documents with the Web of Data

Michael Hausenblas and Martin Hepp

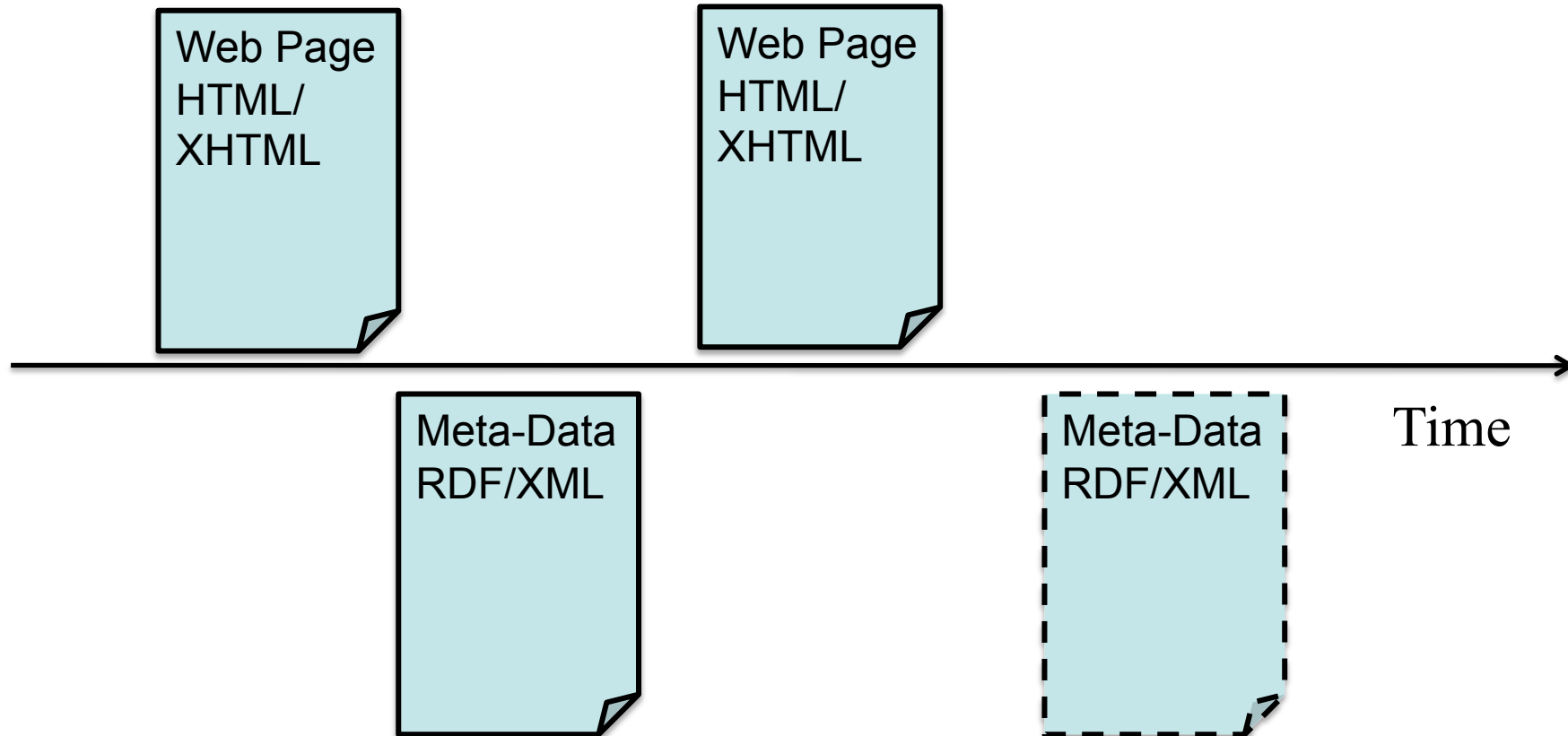
Learning Goal

- Understand the data quality problems that can result from the „naive“ Semantic Web
- Understand the RDFa syntax for embedding RDF data into XHTML documents
- Be able to express GoodRelations data in RDFa

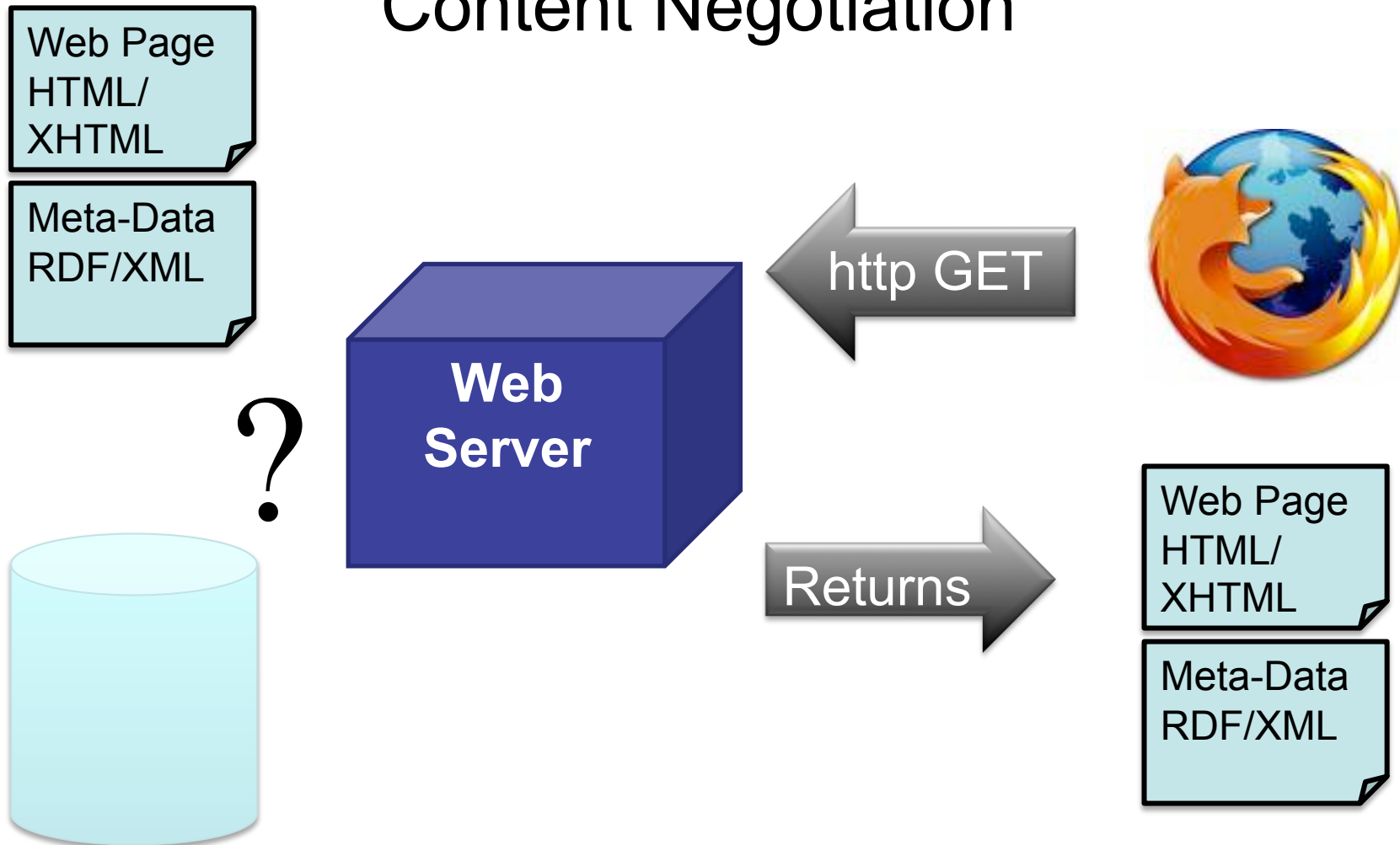
Data Redundancy and Data Quality Problems



Data Redundancy in the Semantic Web



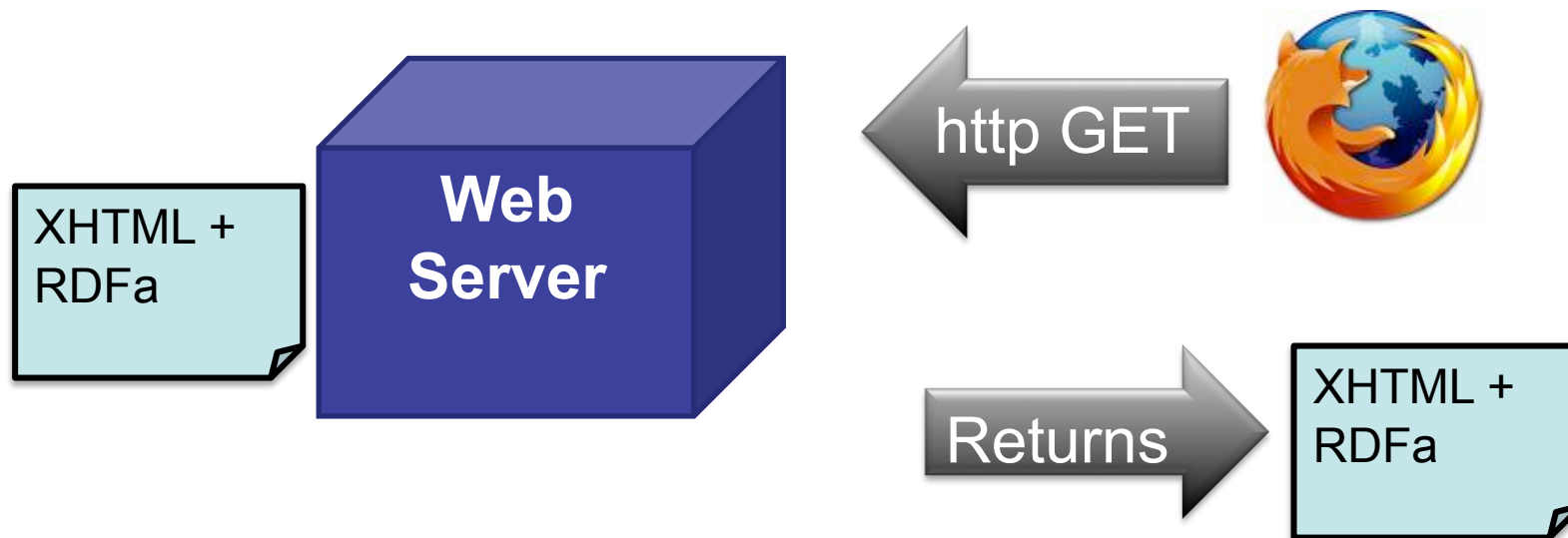
Content Negotiation

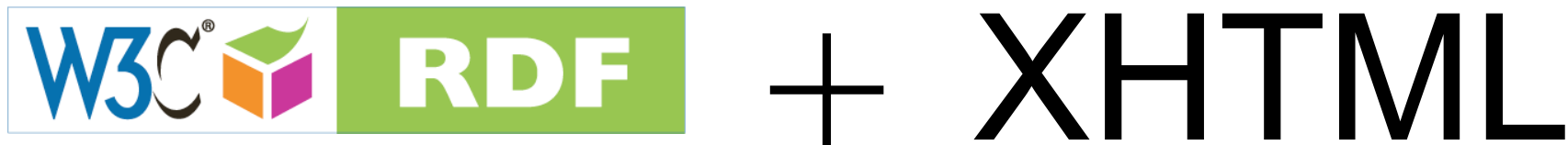


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Embedding RDF in XHTML

- Being able to represent meaning and rendering information in a **single** document





Resource Description Framework *in attributes*

What is RDFa?

- From the Web of Documents' point-of-view: a set of new (X)HTML attributes to express metadata within (X)HTML
- From the Web of Data point-of-view: a serialization format for RDF (such as RDF/XML, etc.), where the RDF triples are "embedded" into (X)HTML

Principles

- Schema Extensibility (other than with Microformats)
- Don't-repeat-yourself (DRY)
- Context/Locality (contrast with GRDDL)
- Self-contained

RDF in Attributes

```
<h1 property="dc:title">GoodRelations  
RDFa minimal example</h1>
```

Subject – Predicate – Object

- **@about** (URIorSafeCURIE) ... for setting the subject of a statement
- **@typeof** (CURIEs) ... for setting the type(s) of a resource (syntactic sugar)
- **@href/@resource** (URIorSafeCURIE) ... for setting the object of a statement

Subject – Predicate – Object

- **@property** (CURIEs) ... for relating a resource to a literal value, that is, for datatype properties
- **@rel/@rev** (reserved word | CURIE)+ ... for relating a resource to another resource, that is, for object properties

Subject – Predicate – **Object**

- **@content** (CDATA) ... for setting a literal object value
- **@datatype** (CURIE) ... for the datatype of a literal object value - if not specified, then the default value is xsd:string

DOCTYPE

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
+RDFa 1.0//EN" "http://www.w3.org/Markup/
DTD/xhtml-rdfa-1.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
<head profile="http://www.w3.org/1999/xhtml/
vocab">
    <title>GoodRelations RDFa minimal
example</title>
</head>
(...)
```


Example - Markup

- <http://www.w3.org/TR/xhtml-rdfa-primer/alice-example.html>
- Install Operator on FF
- Debug page

Example - Queries

Who is the creator of the post with the title
"The trouble with Bob"?

```
PREFIX dc: <http://purl.org/dc/elements/1.1/>
```

```
SELECT ?creator_of_post
```

```
FROM <http://www.w3.org/2007/08/pyRdfa/extract?uri=http://www.w3.org/2006/07/SWD/  
RDFa/primer/alice-example.html>
```

```
WHERE {
```

```
  ?post dc:title ?post_title ;
```

```
    dc:creator ?creator_of_post .
```

```
  FILTER regex(?post_title, "The trouble with Bob", "i")
```

```
}
```

Example - Queries

Whom the heck knows Alice?

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX foaf: <http://xmlns.com/foaf/0.1/>

SELECT ?whom_name ?whom_homepage

FROM <http://www.w3.org/2007/08/pyRdfa/extract?uri=http://www.w3.org/2006/07/SWD/
RDFa/primer/alice-example.html>

WHERE {

?alice rdf:type foaf:Person ;

foaf:mbox <mailto:alice@example.com> ;

foaf:knows ?whom.

?whom rdf:type foaf:Person ;

foaf:name ?whom_name ;

foaf:homepage ?whom_homepage .

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Quizzes

- Why is RDFa important to simplify the creation of Semantic Web content?
- How does RDFa contribute to a better quality of Semantic Web data?
- What is the main principle of RDFa?
- Name the key elements and give a simple example of using RDFa.

Thank you.