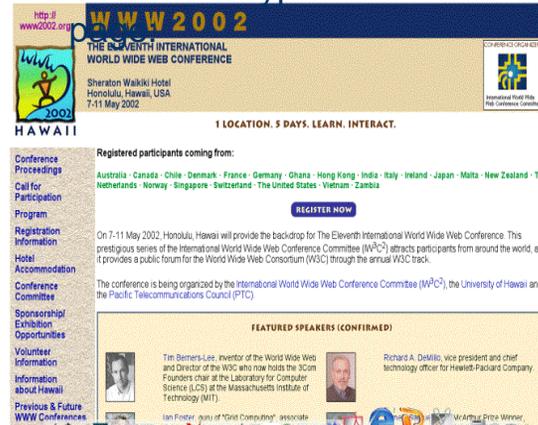


(Part of)  
**Chapter 8**  
**Conclusion and Outlook**

Grigoris Antoniou  
 Frank van Harmelen

## What is the Problem?

- Consider a typical web



- Markup consists of:
  - rendering information (e.g., font size and colour)
  - Hyper-links to related content
- Semantic content is accessible to humans but not (easily) to computers...

## What information can we see...

WWW2002  
 The eleventh international world wide web conference  
 Sheraton waikiki hotel  
 Honolulu, hawaii, USA  
 7-11 may 2002  
 1 location 5 days learn interact  
 Registered participants coming from  
 australia, canada, chile denmark, france, germany, ghana, hong kong,  
 india, ireland, italy, japan, malta, new zealand, the netherlands,  
 norway, singapore, switzerland, the united kingdom, the united states,  
 vietnam, zaire  
 Register now  
 On the 7<sup>th</sup> May Honolulu will provide the backdrop of the eleventh  
 international world wide web conference. This prestigious event ...  
 Speakers confirmed  
 Tim berners-lee  
 Tim is the well known inventor of the Web, ...  
 Ian Foster  
 Ian is the pioneer of the Grid, the next generation internet ...

## What information can a machine see...

WWW2002  
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## Where Will the Ontologies Come From?

- Some large ontologies are becoming de facto standards
  - WordNet
  - NCIBI's cancer ontology
- Many small ontologies
  - are hand-created (e.g. RosettaNet) or
  - Created automatically through machine learning, natural language analysis and from legacy sources (e.g. data schemas)

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Chapter 8

A Semantic Web Primer

## Where Will the Semantic Markup Come From?

- Clearly not by hand
- Tools for new information resources
- Natural language techniques, borrowing from legacy sources for old resources

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Chapter 8

A Semantic Web Primer

## Where Will the Tools Come From?

- Large variety of tools already exists
  - Editors, storage, querying and inferencing, visualization, versioning
- Mostly developed in academic domain
- ... but taken up in the commercial sector
  - Highly innovative startups

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A Semantic Web Primer

## How Should one Deal With a Multitude of Ontologies?

- A big research question, still open
  - A potential bottleneck
- Various approaches currently tested
  - Negotiation
  - Machine learning
  - Linguistic analysis

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## Promising Areas for Initial Successes

- Knowledge Management
  - ... because of central authority
- E-Science
  - Use ontologies, are informed and enthusiastic users of new technology
- E-Commerce probably later
  - Problems with privacy, security and trust