(Part of)

Chapter 8
Conclusion and Outlook

Grigoris Antoniou
Frank van Harmelen

What is the Problem?

- Consider a typical web page

- 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 7th May Honolulu will provide the backdrop of the eleventh international world wide web conference. This prestigious event …

Speakers confirmed

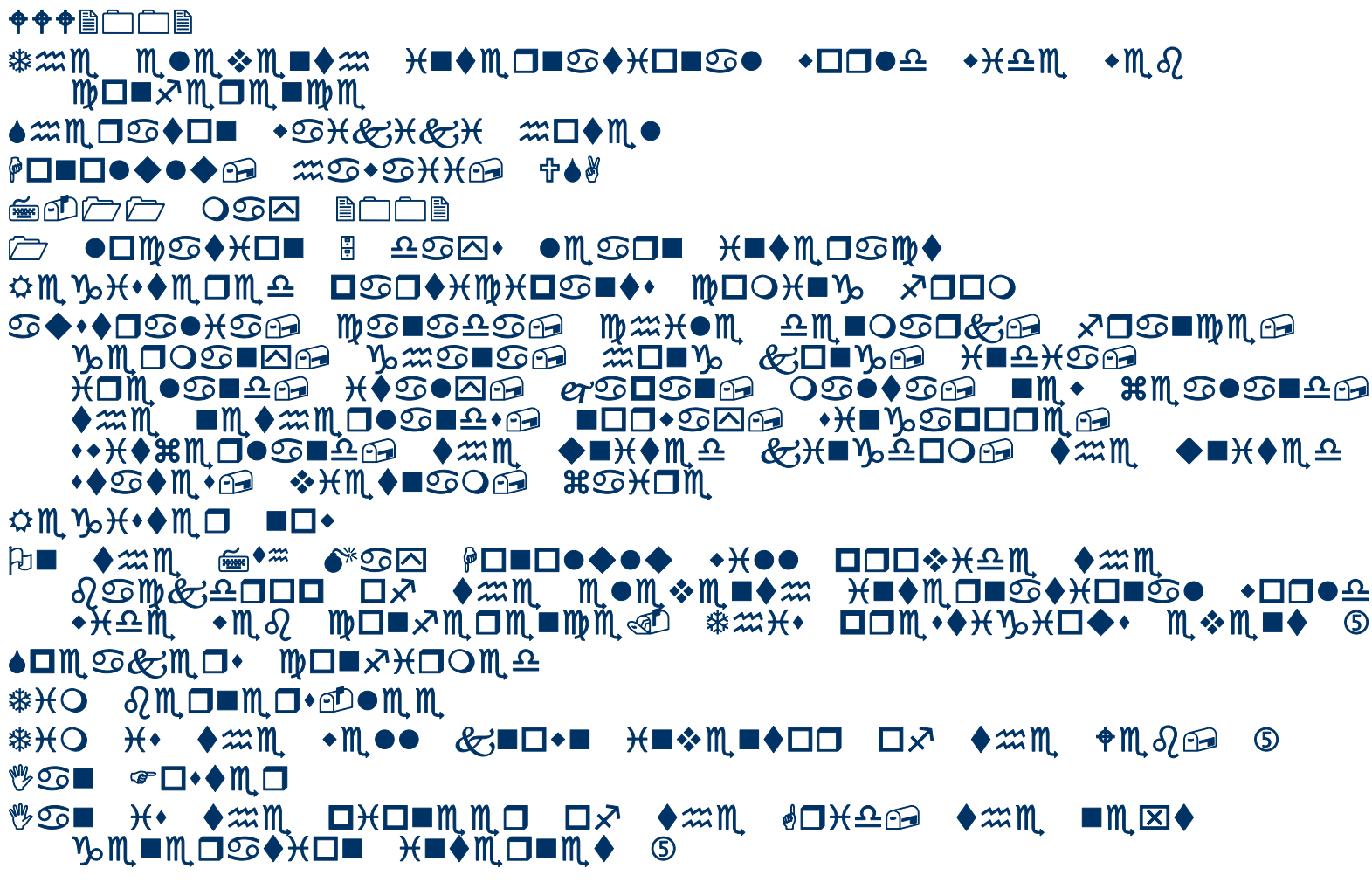
Tim berners-lee

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…



Solution: XML markup with “meaningful” tags?

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Machine sees…

Will the Semantic Web Succeed? Key Questions

- Where will the ontologies come from?
- Where will the semantic markup come from?
- Where will the tools come from?
- How should one deal with a multitude of ontologies?
- Where can we expect the first success stories?

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)

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

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

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

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