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…
Chapter 8 A Semantic Web Primer

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