IR & DB: Toward Controversy and Philosophy

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Controversial Statements

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- I am an expert on this stuff
  - Led integration of AltaVista and Cohera federated DB
  - Keyword search, Q-grams, auto-taxonomization, visual data cleaning & integration, etc.
    - With consulting from Marti Hearst (IR meets DB!)
  - [H & S, SIGMOD '01 industrial track]

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- N$F?

- SO: Let's "Uplevel the Dialogue"

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- Human discourse based on "deep structure"
  - Ferdinand De Saussure, the father of Structural Linguistics
  - Extended by Chomsky
  - Also speak of "relational" nature of language

So what's the philosophical diff?

- Twofold
  - The SOURCE of the structure
  - The USE of the structure

Relational Databases

- ENGINEERED STRUCTURE
  - The design of structure is at the heart of the discussion
  - Codd's lessons: simple design for robust evolution
- LANGUAGE AS PROGRAMMATIC INTERFACE
  - Semantically strict queries provide predictable results
  - Suitable for computer interpretation
    - Programmer can reason about invariants
  - Hence good for embedding into application code
    - Relatively few users interface directly to a Database!

Information Retrieval

- "FOUND" STRUCTURE
  - Take a pile of information, and extract structure therefrom
- HUMAN-CENTRIC EXPLOITATION
  - Rough understanding of query intent
  - Interface more important than query language
    - User can browse/filter/interpret some results
  - Requires a human in the loop
    - Relatively few programs embed IR techniques invisibly

The Synergy

- This is not about semi-structured data!!!

It's not that semi-structured is bad...

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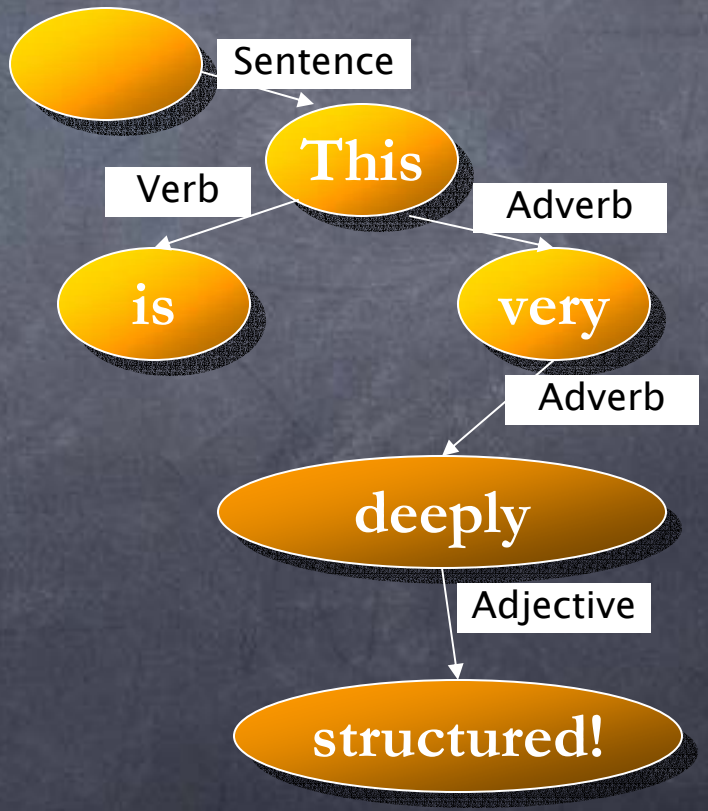
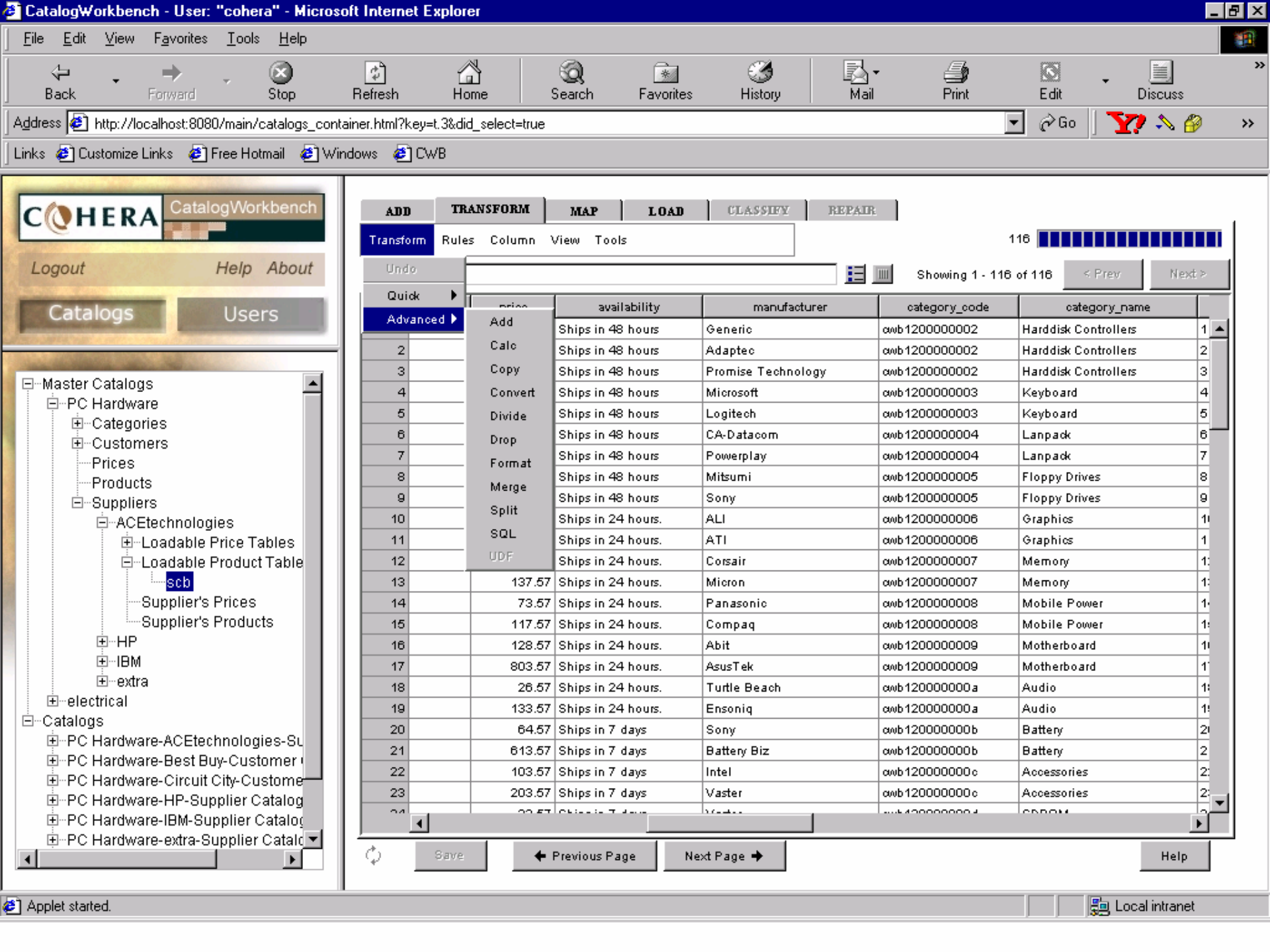


The Synergy

- DB folk working on FOUND STRUCTURE
  - E.g. text queries on "structured" data
  - Information extraction
  - User-centric data mining
  - Schema corpi
- DB folk working on HUMAN INTERFACES for handling uncertainty
  - E.g. keyword search of structure data
  - E.g. online aggregation, visual data cleaning cube navigation, other user-centric mining tasks


CatalogWorkbench - User: "cohera" - Microsoft Internet Explorer
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22 103.57 Ships in 7 days Intel cwb120000000c Accessories 2
23 203.57 Ships in 7 days Vaster cwb120000000c Accessories 2
Save
Previous Page
Next Page
Help
Applet started.
Local intranet

The Synergy

- IR folk working on ENGINEERED STRUCTURE
  - E.g. document design
  - But the simpler, the better (Codd)!!
- IR folk working on embedded systems
  - Google SOAP interface clients (Googlisms)
  - ??
- Frankly, I'm out of my comfort zone

For More Rambling on this Topic

- See the WebDB keynote on my home page
  - http://www.cs.berkeley.edu/~jmh

The Inktomi Search Engine