How and Why Customers Use Oracle's Semantic Database Technologies: A Panel

Moderator:
Xavier Lopez
Director, Oracle Spatial and Semantic Technologies
Oracle OpenWorld
Beijing 2010
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Agenda

• Oracle Semantic Database Technologies: Overview

• Customer Panelists

• Panel Discussion/Q & A
## Semantic at OOW 2010 - Sessions

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<tr>
<th>Date/Time</th>
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<tr>
<td>Monday, Sept 20</td>
<td>How and Why Customers Use Oracle’s Semantic Database Technologies: A Panel</td>
<td>Moscone South Room 200</td>
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<tr>
<td>12:30 p.m.</td>
<td>Electronic Medical Records with Oracle Semantic Technologies at Cleveland Clinic</td>
<td>Moscone South Room 200</td>
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<td>2:00 p.m.</td>
<td>How Cisco’s Enterprise Collaboration Platform Uses Oracle Semantic Technologies</td>
<td>Moscone South Room 200</td>
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## Semantic at OOW 2010 – Hands-On Labs

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<tr>
<td>Tuesday, Sept 21</td>
<td>A Little Semantics Goes a Long Way with Oracle Database 11g</td>
<td>Hilton SF Franciscan A/B/C/D</td>
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<td>1:00 p.m.</td>
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• DEMOgrounds
  • Semantic Database Technologies - *Moscone West, W-045*
Today’s Panelists

- Keith Griffin
  Senior Technical Leader
  Cisco Systems
- Jerry Scott
  General Manager of the SemanticDB project
  Cleveland Clinic Foundation
- J Phil Brooks
  Information Consultant, SE Data Team, Discover IT
  Eli Lilly and Company
- Sean O'Donoghue, CIO
  Lincoln Wallen, Head of Research and Development
  DreamWorks Animation
The purpose of Oracle Semantic Technologies

• To fluidly combine diverse sources of information
  – For analysis, mining, reporting, problem solving, …
  – Sources may be relational, calendars, eMail, social networks, spreadsheets, PDF, ….

• To enable machines to understand what we mean
  – Model machine-recognizable semantics through vocabularies and information derivation rules

• To obtain more semantically rich information from enterprise relational databases
  – Natively, in SQL
Use Case: Integrated Bioinformatics Data

Source: Siderean Software
Oracle Database 11g Semantic Database

- Only leading commercial database w/ native semantic data mgt
- W3C standards-based technologies
- Industry leading 3rd party & open source tools, services, apps support
- Scalable & secure platform scales to repositories w/ billions of triples
- RAC & page-level compression support
- Native inferencing and 3rd party reasoner support e.g., PelletDB
- Choice of SQL or SPARQL query

Key Capabilities:

**Load / Storage**
- Native RDF graph data store
- Manages billions of triples
- Fast batch, bulk and incremental load

**Query**
- SPARQL-Jena/Joseki,Sesame
- SQL: SEM_Match
- Ontology assisted query of relational data

**Reasoning**
- RDFS, OWL 2 RL support
- User-defined SWRL-like rules
- Plug-in architecture
Semantic Technologies Customers

**Life Sciences**
- Lilly
- Pfizer
- Swiss Institute of Bioinformatics

**Defense/Intelligence**
- Hutchinson 3G Austria

**Telecomm**
- 11g Reference

**Education**
- The University of Michigan

**Publishing**
- Westlaw
- Thomson Reuters

**11g Reference**
Semantic Technologies Customers

**Life Sciences & Clinical**
- Cleveland Clinic
- Heart and Vascular Institute
- DE ROUEN
- Boehringer Ingelheim
- Partner: MONDECA
- ORACLE
- PRIMAVERA
- Life Sciences IBU Integrating Portfolio Manager w/ TERANODE®

**Defense & Intel**
- Raytheon
- HARRIS
- DARPA

**Telecomm**
- CISCO

**Entertainment**
- DreamWorks
National Intelligence: Text Mining

1. Unstructured Data (Text)
   - Blogs, open source, newsfeed
   - Signal Intelligence, message traffic
   - Analyst Reports (Content Mgmt)

2. Model
   - Entity Extraction Engine
     - Feature/term/relation Extraction, categorization (Insight, Lymba, Calais, Gate)
   - Ontologies + Rules

3. Structured Data
   - Knowledge Base (RDF Store)
   - SPARQL/SQL
   - XML/OWL/N3
   - “Oracle’s founder Larry Ellison wins 2010 America’s Cup Race …”

4. Mining & Discovery
   - 10’s of billions of triples
   - Triple Structure: Subj – Pred - Obj
   - Explore
   - Analyst

Explore
Browsing, Presentation, Reporting, Visualization, Query Tools (e.g. i2, Centrifuge, Visual Analytics)
Data Integration Platform in Health Informatics

Enterprise Information Consumers (EICs)

Design-Time Metadata

Deploy

Run-Time Metadata

Integration Server (Semantic Knowledge base)

Access

Model

Virtual

Relate

Model

Physical

LIS CIS HTB HIS
Semantic Technologies in a Nut Shell

- **Model complex real-world relationships**
  beyond Boolean in the data as a graph
  - Allow schemas to continuously and dynamically evolve

- **Inference among relationships**
  w/ rules, std. concepts and terms to discover

- **Query using graph patterns**
  provide more semantically complete information for decision-making.
  - Support queries that are not defined in advance
Panelists
SOFTWARE. HARDWARE. COMPLETE.