The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.







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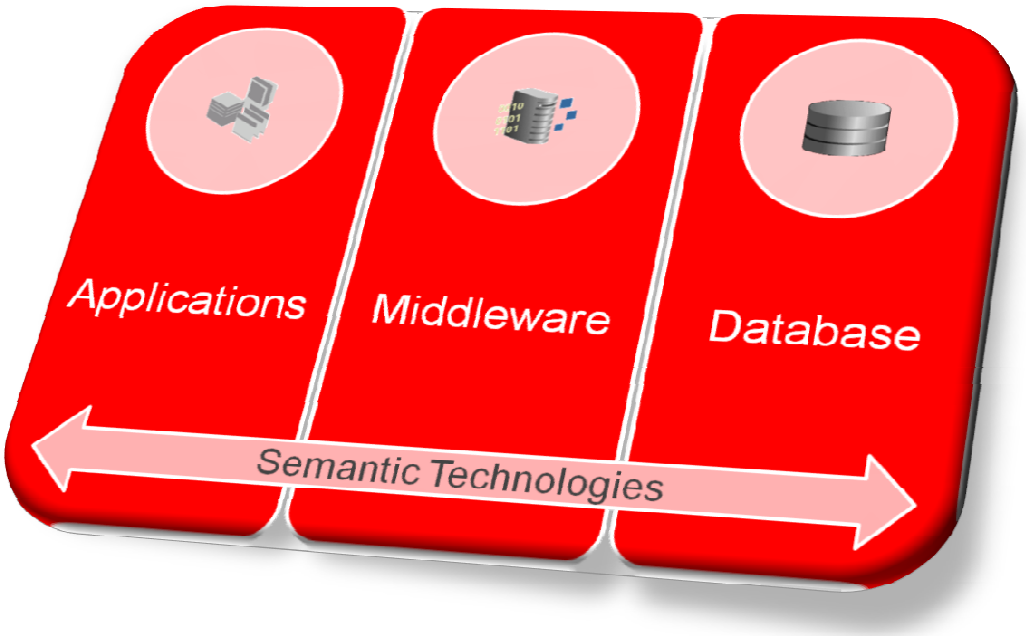
Bringing Semantics to Mainstream Markets

Jeff Pollock, Senior Director, Fusion Middleware

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Agenda

- Oracle Taking the Semantic Web Mainstream
- Building the Business Case for Yourself
- Semantic Web for Dummies



“Semantic Technology”

is
NOT
a Market

“Semantic Technology”

(it isn’t even a *Feature*)

Mainstream Markets

- **Consumer Software**
  Operating Systems, Desktop Productivity, Email, Web Search, Retail Web Sites, Media Mgmt (iTunes), Social Networking, Text Messaging etc.

- **Business Software**
  Databases, Middleware (Application Servers, TPS, ETL, SOA), ERP Applications (Ledger, HR, Supply Chain & Logistics), Business Intelligence & Data Warehousing etc.

Mainstream Consumer Markets















Mainstream Business Software Markets

~ $150 Billion in net new licenses per year

Size Matters:

~10% margins if <$1B

~17% margins if $1-5B

~30% margins if >$5B

(Oracle = 44% operating margins on $22B)

Mainstream Business Software Markets

Blue Ocean

(uncontested opportunities)

vs.

Red Ocean

(there's blood in the water because that's where the action is at!)

Mainstream Markets

are a measure of
VALUE

they are the way society primarily values goods and services

Oracle's Product Families



Database

- Database
- Real Application Clusters
- Partitioning
- OLAP / Data Mining
- Spatial
- Times Ten
- Database Vault
- Secure Enterprise Search
- …



Fusion Middleware

- Java Application Server
- Development Tools
- Business Process Mgmt
- Identity Management
- Data Integration
- Content Management
- Business Intelligence
- User Interaction
- …



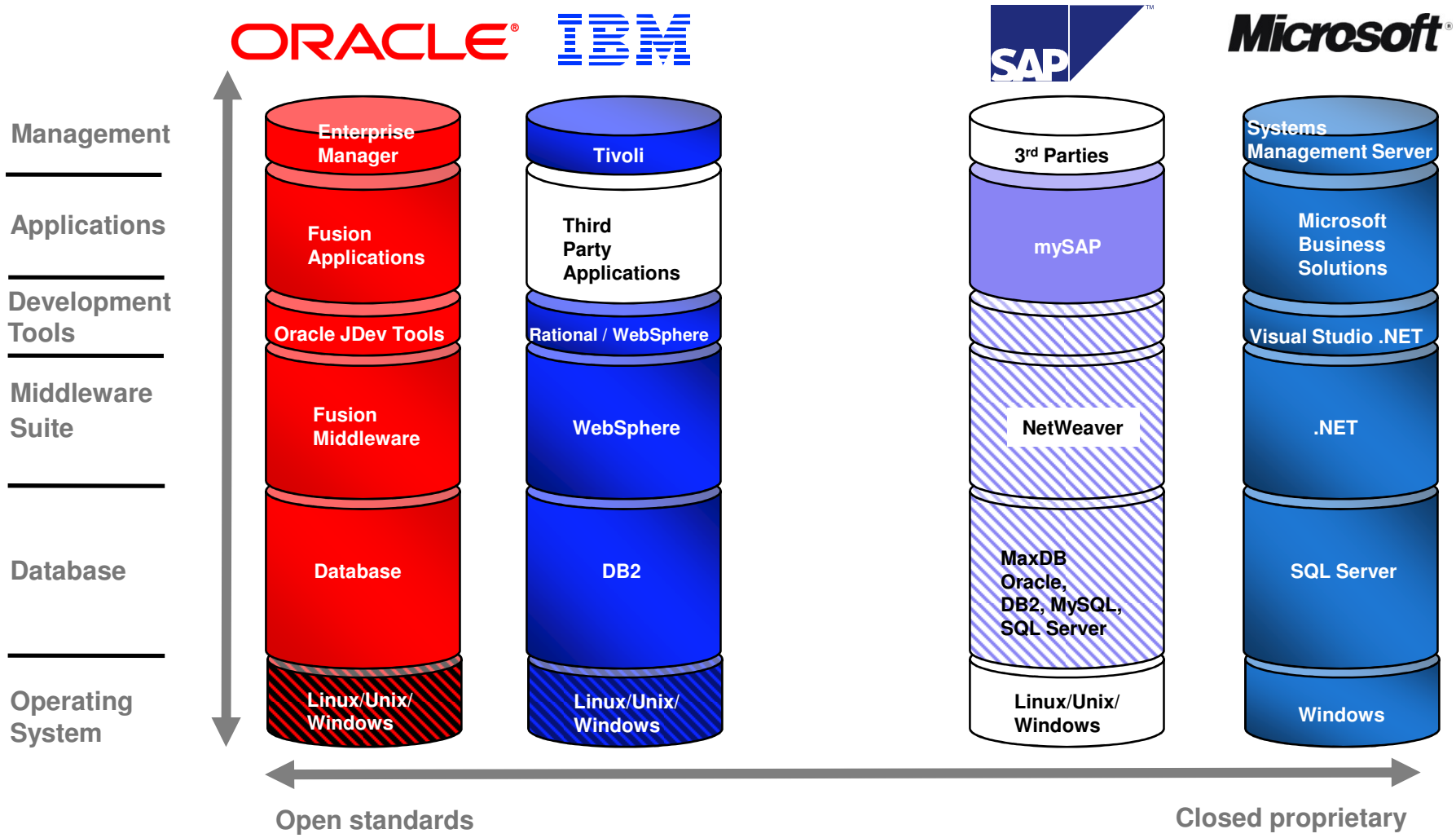
Applications

- E-Business Suite
- PeopleSoft Enterprise
- Siebel CRM
- JD Edwards
- Oracle Retail
- i-flex Financial Services
- Communications
- Utilities
- …

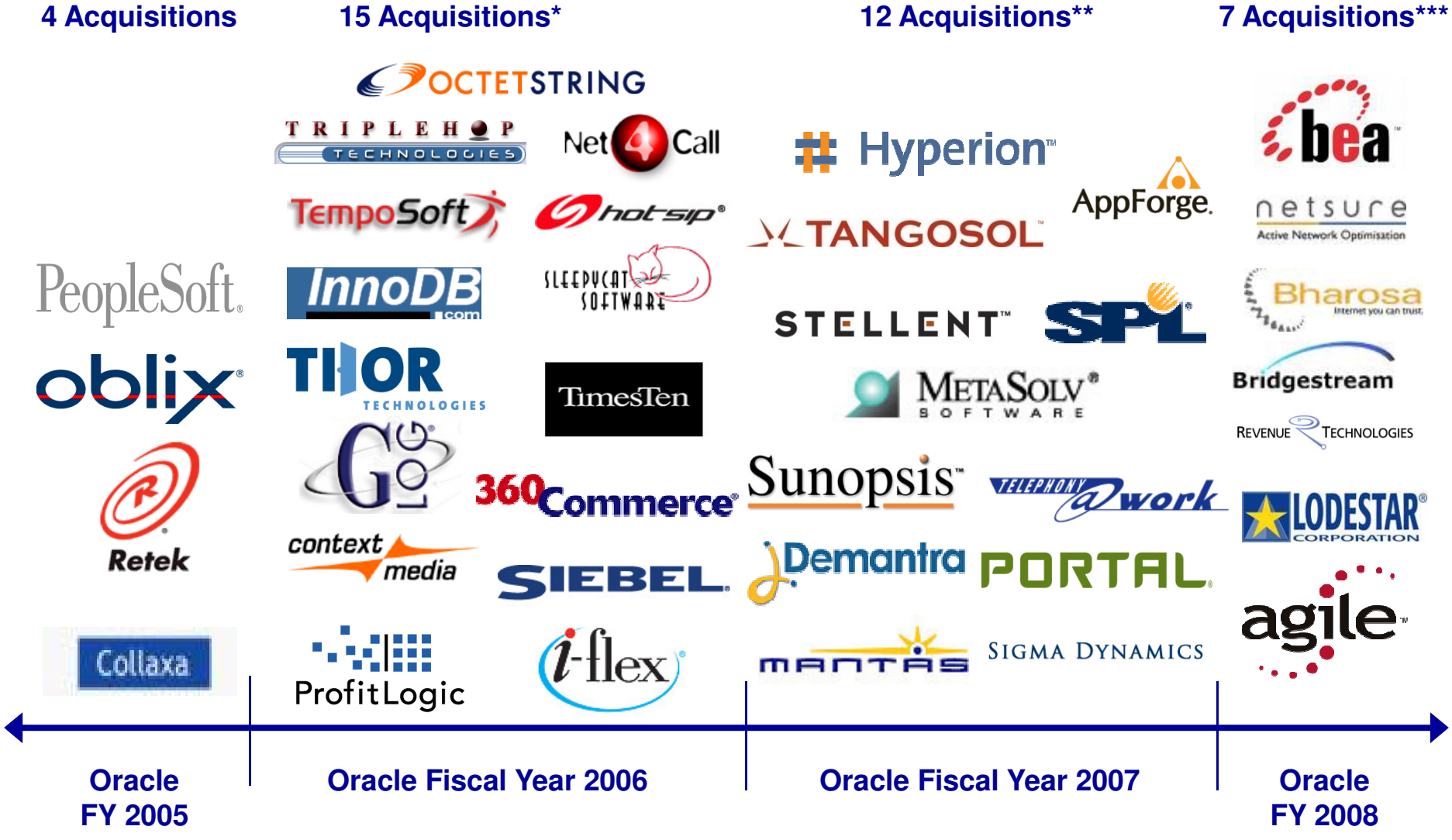
Unbreakable Linux

- Operating System
- File System
- Virtualization

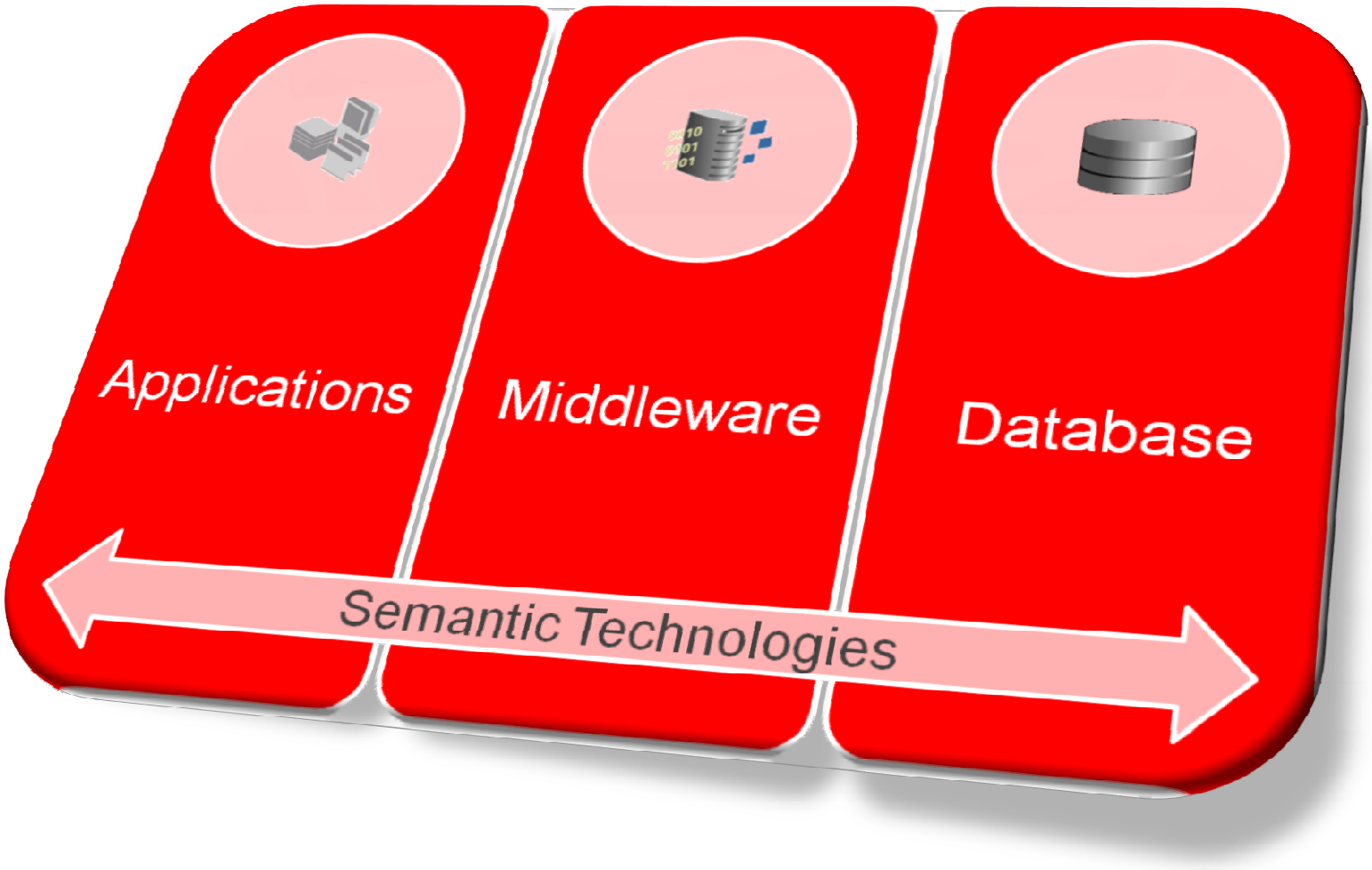
Oracle Delivers The Most Complete And Open Software "Stack"



Oracle's Recent Acquisitions



* Excludes acquisitions of Covansys and Hexaware operations. ** Acquisition of Mantas through majority-owned i-flex solutions company..


Applications
Middleware
Database
Semantic Technologies

Oracle Database & Semantics

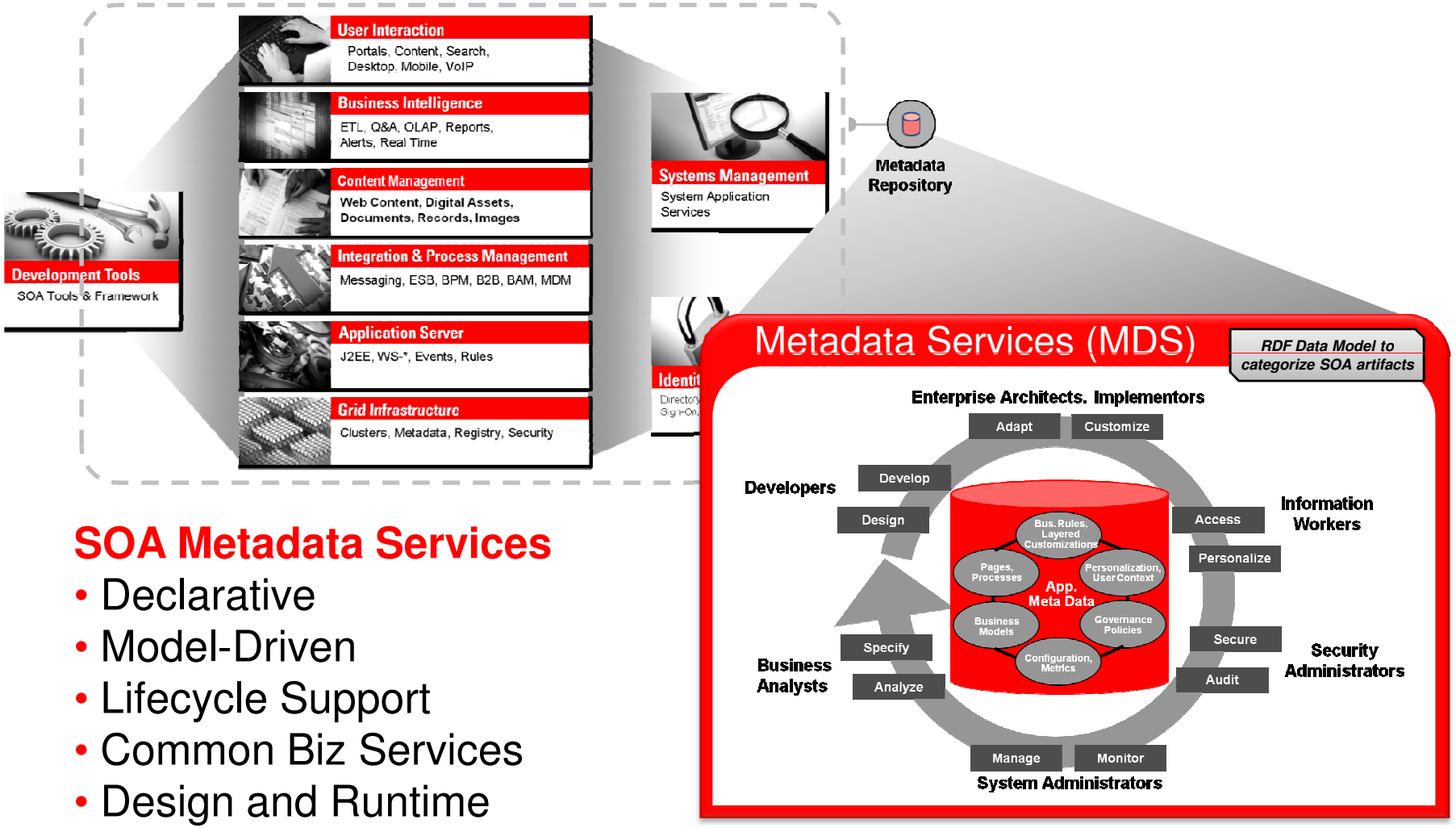
- **Oracle Spatial / RDF & OWL**
  The spatial engine natively supports RDF and OWL data languages – expressivity is optimized for OWLPrime fragment and plugins exist for both Jena and TopBraid Composer

- **Oracle DB Rules Manager**
  The database rule engine supports declarative, event-oriented rules and expressions

Oracle Middleware & Semantics

- **Oracle WebCenter Suite**
  The Web 2.0 framework natively supports RDF structured RSS feeds for pushed data
- **Oracle Application Server 11g**
  - *Metadata Service*
    The shared service uses RDF as a core object model for shared metadata annotations
  - *Oracle Business Rules Engine*
    The shared rule engine uses expert system declarative rule technology
- **Oracle Identity Management**
  - *Micro-Entitlement Service*
    The entitlement kernel relies on declarative XACML compliant policy engine

Vendor Implementation by Oracle: Oracle Fusion Middleware Metadata Services



SOA Metadata Services

- Declarative
- Model-Driven
- Lifecycle Support
- Common Biz Services
- Design and Runtime

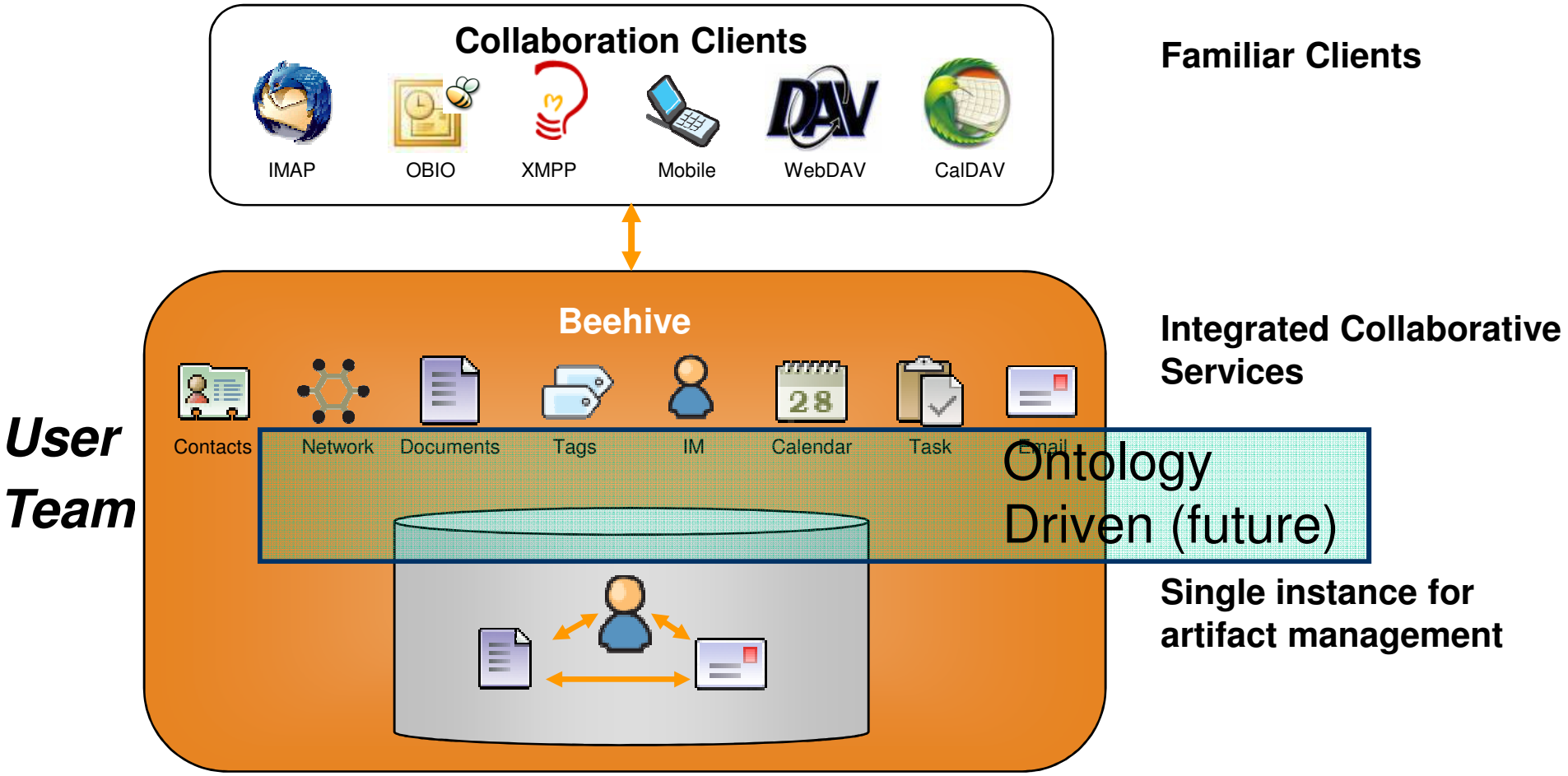
Oracle Search & Semantics

- **Oracle Secure Enterprise Search 10g**
  - Oracle Secure Enterprise Search is the first enterprise search platform to support RDF metadata.

- ***Faceted Search and Navigation***
  The search navigation UI can walk RDF graphs for user-centric content discovery, when jointly deployed with partner technology

Oracle Beehive

Enterprise Class Collaborative Application and Platform



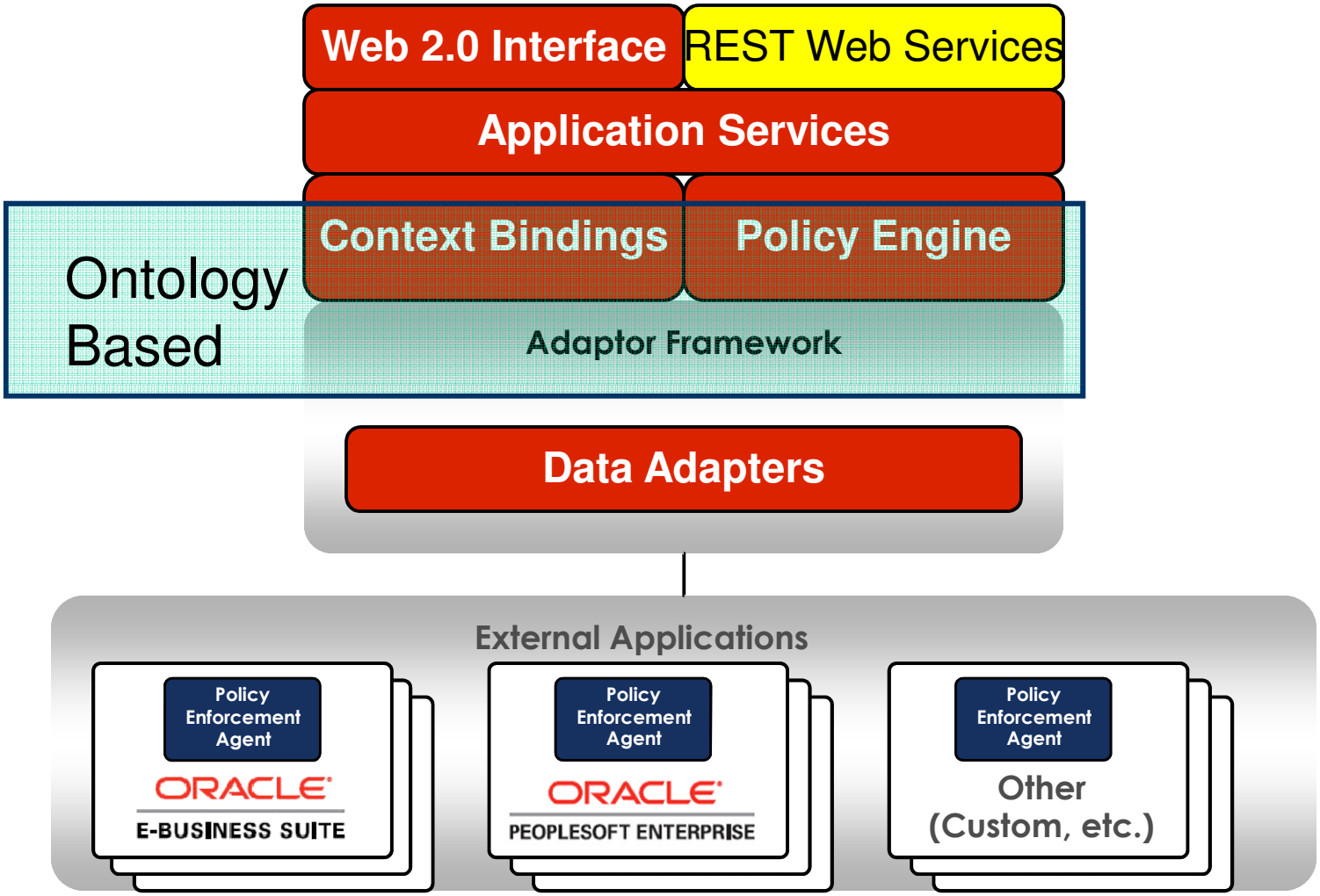
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Oracle Applications & Semantics

- **Oracle ERP Applications**
  Oracle applications are comprised of Oracle, PeopleSoft, Siebel and JD Edwards ERP systems
  - Built on Oracle 11g Middleware
- **Oracle Vertical Applications**
  Oracle Governance Risk and Compliance (GRC)
  - Leveraging Oracle middleware and Sesame APIs
  - GRC ontologies and simple reasoners leveraged for mainstream compliance and SoD use cases

Governance Architecture

Adaptive, Usable, and Flexible



Technical Innovations

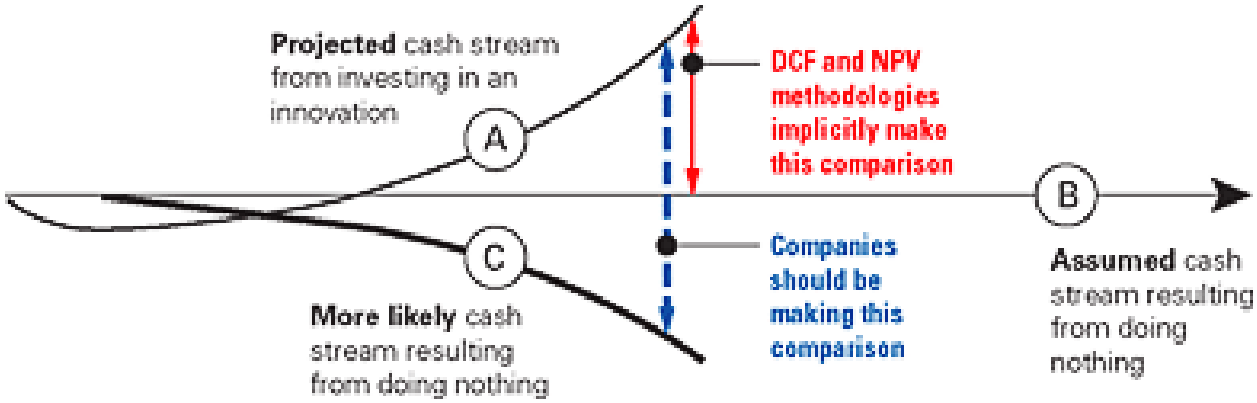
- **Real Time Policy Enforcement**
  - Robust composition of policies in the UI
  - Ontology/Reasoner based
- **Ontology Distribution**
  - Using REST to distribute the ontology graph
  - Combining a robust backing-store with in-memory caching
- **Scalability**
  - Up to 10^7 total (raw and inferred) triples
  - Distributing through N-in memory Java Processes
- **Mixed-mode Reasoning**
  - Forward-chaining, Backward-chaining, etc.


BUSINESS CASE FOR SEMANTICS
ORACLE

Semantics can be a Low Risk Choice

- **Status quo is risky**
  - Data and Sensor (Instrument) Proliferation
  - Complexity Explosion
  - Executive Mandates & Pressures
- **Discounted Cash Flow trap**
  - Conventional risk assessments falsely favor do-nothing strategy (by assuming status quo inputs into future)
- **Semantic Web offers safety and protection**
  - By correctly investing in technology that can accommodate extreme levels of data proliferation and complexity

Discounted Cash Flow Trap



"Most executives compare the cash flows from innovation against the default scenario of doing nothing, assuming—incorrectly—that the present health of the company will persist indefinitely if the investment is not made. For a better assessment of the innovation's value, the comparison should be between its projected discounted cash flow and the more likely scenario of a decline in performance in the absence of innovation investment."

Christensen, C. M., Kaufman, S. P., & Shih, W. C. (2008, 01). Innovation Killers. Harvard Business Review .

Partners Help De-Risk Semantics

- **Ask your partners about their plans to adopt Semantic Web standards for metadata and data – don't "go-it-alone!"**

- **Large vendors supporting semantic technology**
  - Hewlet Packard
  - IBM
  - Microsoft
  - Oracle
  - SAP

The Great Thing About Standards…

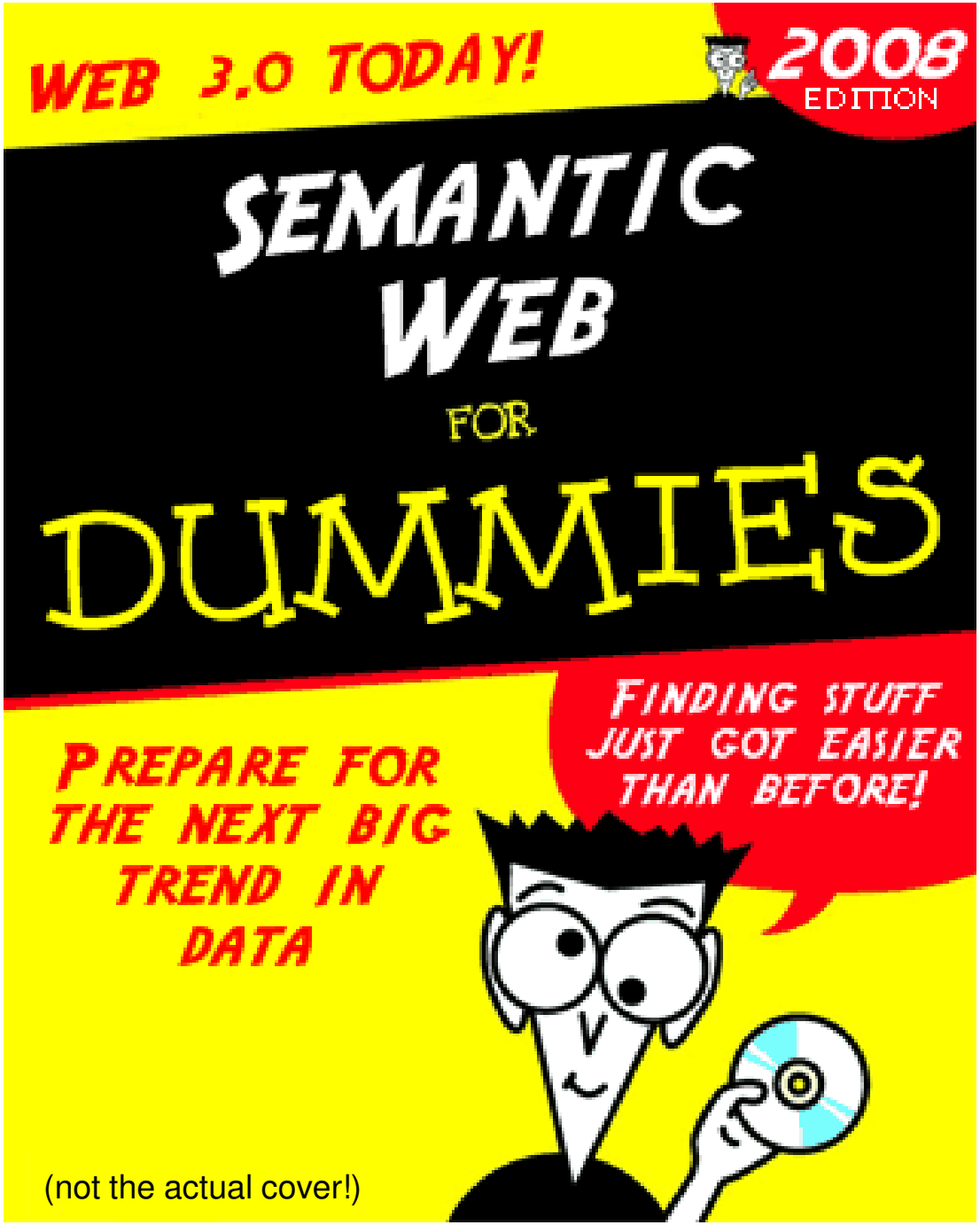
- Object Management Group – controls UML and CWM specifications, is adopting RDF and OWL as the centerpiece specification for their core Definitional Metamodels
- International Standards Organization – controls various EDI and Metadata specifications, is adopting RDF and OWL within several ISO specification families
- World Wide Web Consortium – controls XML and SOA specifications, is adopting RDF and OWL as extensions to existing XML and Web Service specifications
- OASIS – controls many vertically-oriented business data specifications, is adopting RDF and OWL as a core feature in standards for Documents, Data Centers, Security, and Business Process Management

Technical Superiority

- **Semantic Web standards are the first data standards that were purpose-built for supplying flexible metadata (no other languages have that historic purpose)**

- **Areas where RDBMS, UML, and XML technologies are misused, and where Semantic Web technologies excel, include the following:**
  - Specification of computationally sound business information models
  - Specification of linking and relationship (meta)data across physical data locations
  - Specification of dynamic structural logic and rules that are part of the data realm
  - Specification of a federation approach for geographically separate data records


SEMANTIC WEB FOR DUMMIES
ORACLE


WEB 3.0 TODAY!
2008
EDITION
SEMANTIC
WEB
FOR
DUMMIES
PREPARE FOR
THE NEXT BIG
TREND IN
DATA
FINDING STUFF
JUST GOT EASIER
THAN BEFORE!
(not the actual cover!)

CH: 16 TEN MYTHS ABOUT THE SEMANTIC WEB

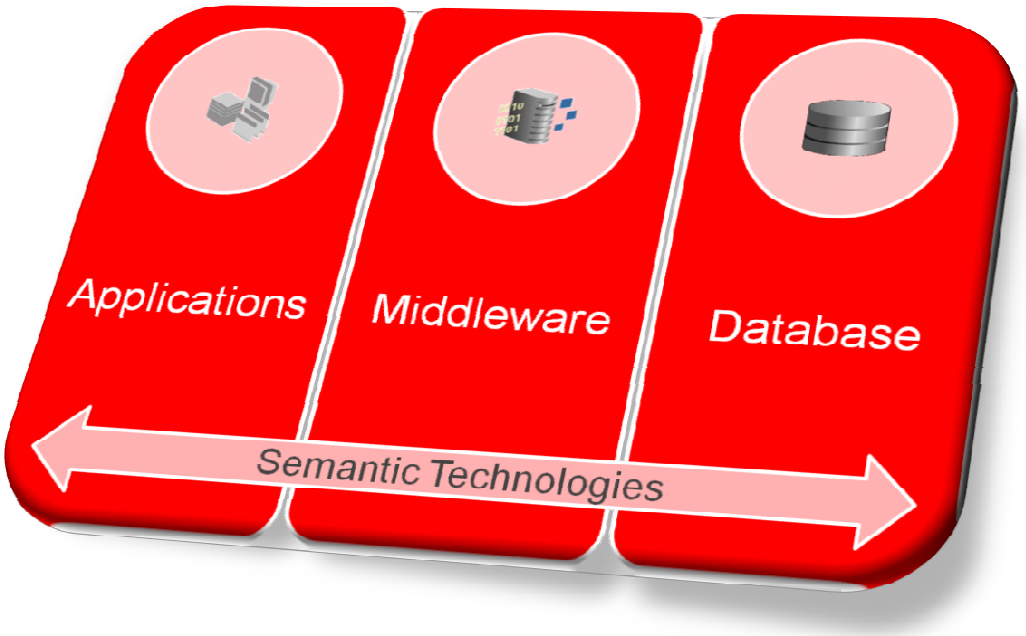
1. The Semantic Web is Science Fiction
2. The Semantic Web is for Tagging Web Sites
3. The Semantic Web will Put Google Out of Business
4. The Semantic Web is too Complex to Succeed
5. The Semantic Web is a Catalog System
6. The Semantic Web is an Ivory Tower Design
7. The Semantic Web is Description Logic
8. The Semantic Web is Artificial Intelligence (again)
9. The Semantic Web is a $20 Billion Industry
10. The Semantic Web Hasn't Changed the World

Myths Busted!

Finding stuff just got easier than before…

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Q&A



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