Adopting FIBO Standards and Semantic Web Technologies in Financial Services

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Introduction to Cambridge Semantics (CSI)

CSI offers Anzo, a software suite driven by semantic technology standards to execute Unified Information Access solutions

Company:
- Founded by senior members of IBM’s Advanced Internet Technology Group

Software:
- Market leading Anzo software suite is built on open Semantic Web standards
- Currently 3rd generation of the product in production use

Select Customer Presentations & Interviews
SearchCIO, “Using Semantic Technology to Turn Big Data into Smart Data”, Interview with David Saul, CSO, State Street

Select Media Coverage on Cambridge Semantics & Semantic Technology
- Ventana Research, Cambridge Semantics Makes Intelligent Use of Information
- Strategic Finance cover story: Business Tool – The Next Quantum Leap
- InformationWeek, “Big Data + Semantic Web: Love At First Terabyte?”
The Emerging Industry Approach to Smart Enterprise Data Management

Industry Data Challenges

Growing demand to on-board varied data, extract insights & support new revenue streams

Ever changing demands for regulatory reporting & meet regulatory standards

All this while handling growing data volumes, multitude of formats, varied sources from inside or outside of the enterprise

Semantic Approach

A simple, universal way to represent data & its meaning, regardless of source format

Unambiguous shared meaning (metadata) that travels with the data and understood by different people & machines

Revolutionary flexibility – Data model can be rapidly adapted to integrate new data

Based on standards & built for the Web – diverse, rapidly changing & large scale

A growing need to semantically understand and manage data
Semantic Web Paradigm: Unifying Information

Traditionally:
Interlinking is costly

Semantics:
Interlinking is cheap

The World Changes
Semantics Put Data Within Reach of Business Consumers

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Semantic models allow easy understanding of the data for faster & cheaper integration & analysis of data.
Semantic Approach is becoming the New Industry Standard

“The next generation of Data Management Platform based on Semantics and Big Data Technologies do not suffer from legacy [technology] limitations”

CEO, Bloomberg

Gartner & Forrester Identify Semantics Among Top Technology Trends in 2013

Select Financial Institutions with interest in Semantic technology

Select Financial Customer Analytics companies deploying Semantic technology

“Confidential

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Page 6.
The FIBO standard is an industry initiative to define financial industry terms, definitions and synonyms using semantic web principals and widely-adopted OMG modeling standards.
1. Departmental Use Cases
   – Investigation, Surveillance & Monitoring
   – Research and Intelligence Platform

2. Enterprise Use Cases
   – Enterprise Data Management – Data as a Service
   – Entity Management
   – Information Landscape
Semantic Use Cases for Financial Services
1. Entity Management

- Entity Management
  - Flexible, semantic data model enables rapid integration across systems
  - Visually navigate, analyze and validate the web of relationships among various entities (clients, counterparties, …)
  - Built on FIBO & LEI standards and data
Semantic Use Cases for Financial Services

2. Investigation, Surveillance & Monitoring

- Integrate disparate data sources (watch lists, trade blotters, news feeds and email communications etc.)
- Explore and automate anomalous patterns
- Applications include Insider trading, cross border securities fraud and AML
Semantic Use Cases for Financial Services

3. Research and Intelligence Platform

• Research & Intelligence Platform
  – Overlay existing research systems with semantic search and relationship visualization
  – Get ultra-targeted research and news alerts
  – Integrated intelligence platform for analysts

Silver cut his earnings estimates for fiscal year 2014 to $46.62 a share from $51.71, but noted that he expects to see an uptick in new products later this year to help Apple return to growth. “Following a Jun-Q product pull, we expect new products (including iPhone mini) to expand Apple’s emerging markets offering and return Apple to EPS growth in C2H,” Silver wrote in a note.

This is the same story Apple investors have been hearing recently. Credit Suisse recently cut its earnings estimates on Apple on iPhone concerns, citing competition from Samsung, and the inevitable product refresh later this year. The iPhone 5S is expected later this year.
Semantic Use Cases for Financial Services
4. Enterprise Data Management

Full Semantic implementation across EDM lifecycle

Data Acquisition
- Acquire/Virtualize Data from any source, structured & unstructured

Data Management
- Build linked “Golden Copies”

Data Distribution
- User flexibility - provide high-quality data, where, when & how it is required

- Flexible, high-performance, meta-data virtualization across existing infrastructure
- High quality, consistent, linked “golden copies” of enterprise data
- Data and analytics as-service-model
EDM: Acquisition

- Integrate any data source, structured, semi-structured and unstructured
- Rapid onboarding of new data sources
  - Automated & machine assisted auditing of data.
  - Metering & managing of third party data
  - Business concept driven mapping
- Easily accommodates changes in source data structures
- Configurable workflow and data quality management

Examples

- Counterparty Data from RDBMS
- Reference Data & Vendor feeds
  - XML
- Enterprise Data – structured & unstructured
  - Configurable Workflow
Anzo for EDM: Management

- **Data Acquisition**
  - Graph Store
  - Industry Ontologies
  - Business Rules Engine
  - Network Analytics

- **Data Management**
  - Business level models and terminology to manage golden copies across varied data sources
  - Flexible data model - overcomes RDBMS/ETL challenges with change
  - Operationalizes industry standards including FIBO, FIRO, SBVR, LEI,..
  - Enables discovery of new relationships in the data

- **Data Distribution**
Anzo for EDM: Distribution

**Data Acquisition**
- Supports multiple output formats – SWIFT, XBRL, RDBMS etc

**Data Management**
- Read/write configurable web dashboards with Excel-type analytics
- Bidirectional Excel connectivity & management
- App development platform – pre-packaged and custom

**Data Distribution**
- Easily integrate third party analytic tools
5. Information Landscape

- **Complete catalog of information assets**
  - Databases
  - Applications
  - Content management systems
  - Web services
  - Capture data flows and dependencies
  - Industry and enterprise models and vocabulary registry

- **Semantic descriptions of data**
  - To field level
  - Mapped onto industry and enterprise models and vocabularies

- **Foundation for the enterprise information fabric**
  - Improves mapping
  - Potential for federated queries
Anzo Architecture & Capabilities

Applications
- Anzo on the Web
  - Anzo.js Client Library
- Anzo for Excel
  - Anzo.Net Client Library
- Rich Client Apps
  - Anzo .java/.Net Client Library
- Applications and BI Tools
  - Anzo Relational Replicator

Middleware
- Virtualize data using W3C semantic standards
- Operationalize industry standards e.g., FIBO, LEI
- Real-time data events
- Granular security and access control
- Ontology, Mapping, Visualization & Service registries

Anzo Server
(SOA; OSGI, RDF & OWL over JMS)
- Reasoning & Rules
- Workflow
- Semantic Services

Anzo Connect
- Full/Incremental ETL
- Web Services
- Federated SPARQL

Enterprise Data Fabric
- Data Mart/Warehouse
- Enterprise Applications
- Directory (LDAP, AD)

3rd Party Databases & Applications
- RDBMS
- Teradata
- Hadoop
- Salesforce

Unstructured Content
- NLP
- Text Analytics
- Semantic Analysis

External Data Sources
- Anzo on the Web
- Anzo for Excel
- Rich Client Apps
- Applications and BI Tools
- Anzo Relational Replicator

Anzo Graph Database
- Anzo Content Repository
Potential Deployment Models

System of Record

Semantic Server

Data Mart/Warehouse

Enterprise Applications

Smart Layer

Data Mart

Semantic Server

Data Warehouse

Enterprise Applications

Integration Hub

Semantic Server

Data Mart/Warehouse

Enterprise Applications

Transformer

Semantic Server

Data Mart/Warehouse

Enterprise Applications

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Thank You

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