



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

Semtech 2012: [“Athena: Using Semantics to Help Manage Staples’ Enterprise Service Bus”](#), Presented by Staples

Select Media Coverage on Cambridge Semantics & Semantic Technology

- *Xconomy and Motley Fool*, [“Cambridge Semantics, Looking to Put Microsoft Excel “On Steroids,” Brings Intelligent Data Sorting to Non-Techies”](#)
- 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?”](#)

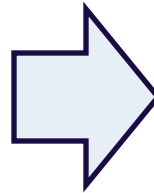
The Emerging Industry Approach to Smart Enterprise Data Management

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

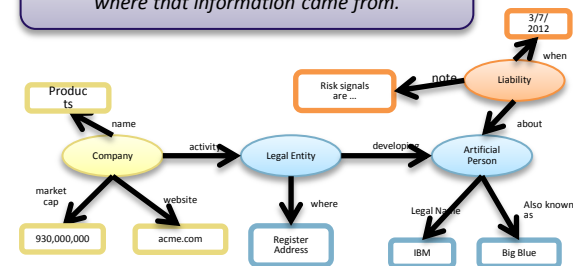
A simple, *universal way to represent data & its meaning*, regardless of source format

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

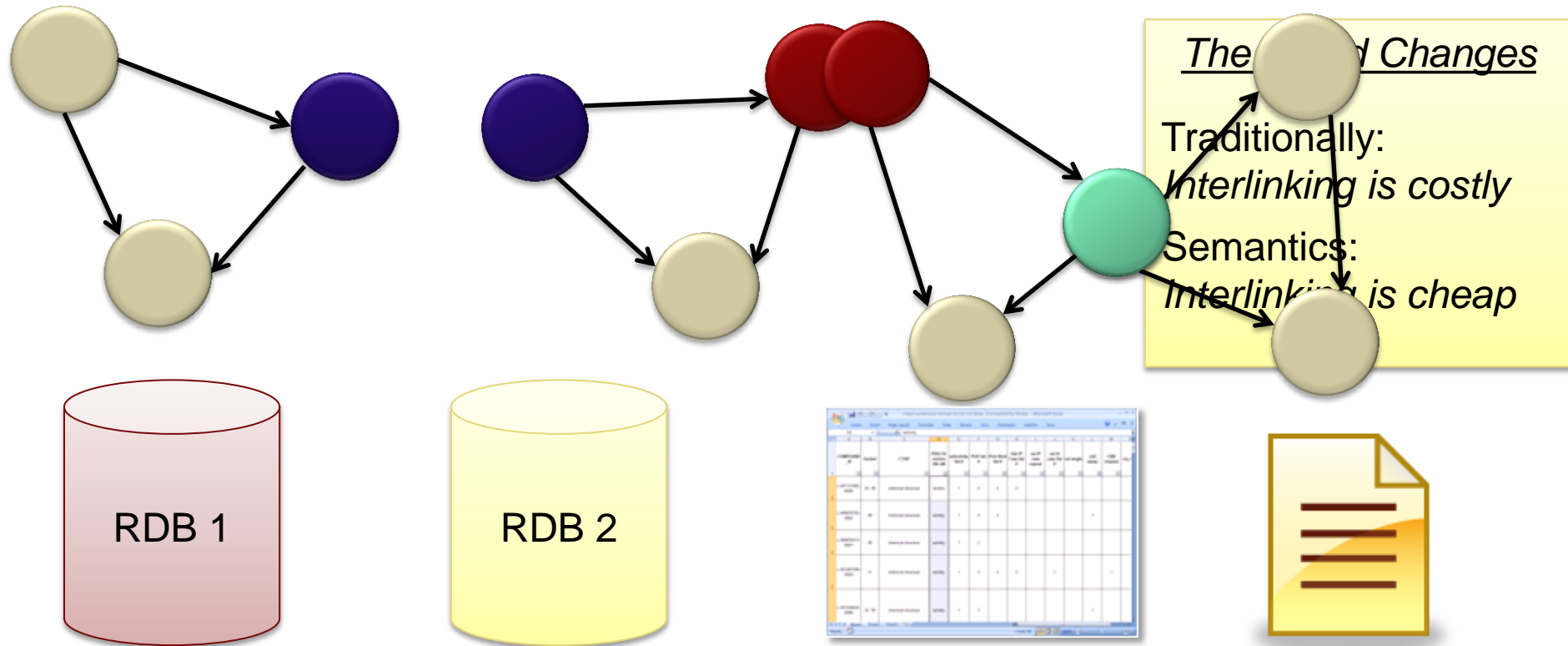
Based on standards & built for the Web –diverse, rapidly changing & large scale

Users and applications deal only with a unified view of information, without worrying about where that information came from.



A growing need to semantically understand and manage data

Semantic Web Paradigm: Unifying Information



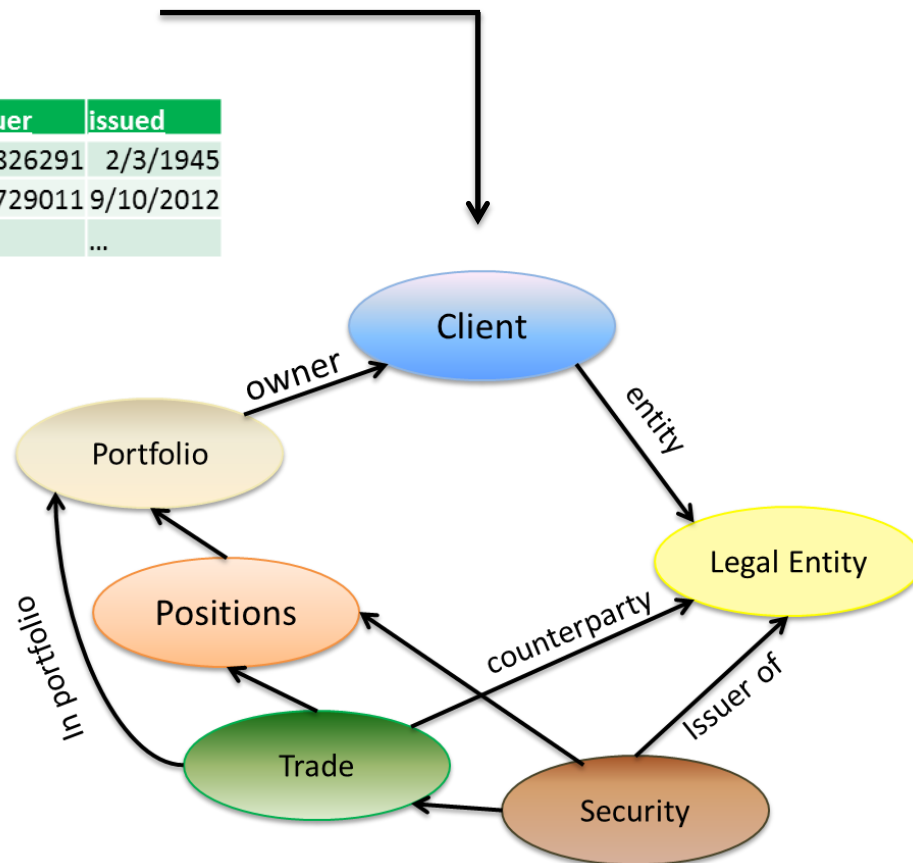
Semantics Put Data Within Reach of Business Consumers

tr date	price	sec id	quantity	cp id
10/11/2012	102.345	726281262	56700	62729011
3/4/2012	12.34	927227292	9800	20220113
...

cl name	le id	level	sec id	class	issuer	issued
GE	62729011	2	927227292	EQ	27826291	2/3/1945
Ford	27826291	4	726281262	CP	62729011	9/10/2012
TD Bank	20220113	1
...

Relational
Technology

Semantic models allow easy understanding of the data for faster & cheaper integration & analysis of data



Semantic Approach is becoming the New Industry Standard

Industry Organizations

ENTERPRISE DATA MANAGEMENT
EDM
COUNCIL

OMG
OBJECT MANAGEMENT GROUP



FIBO
Financial Industry Business Ontology

Industry Analysts

Gartner

FORRESTER

Gartner & Forrester Identify Semantics Among Top
Technology Trends in 2013

Financial Institutions

Select Financial
Institutions with interest
in Semantic technology



citibank

CHASE

**Goldman
Sachs**



STATE STREET

UBS

Financial Analytics

Select Financial Customer
Analytics companies
deploying Semantic
technology

THOMSON REUTERS **EIKON**

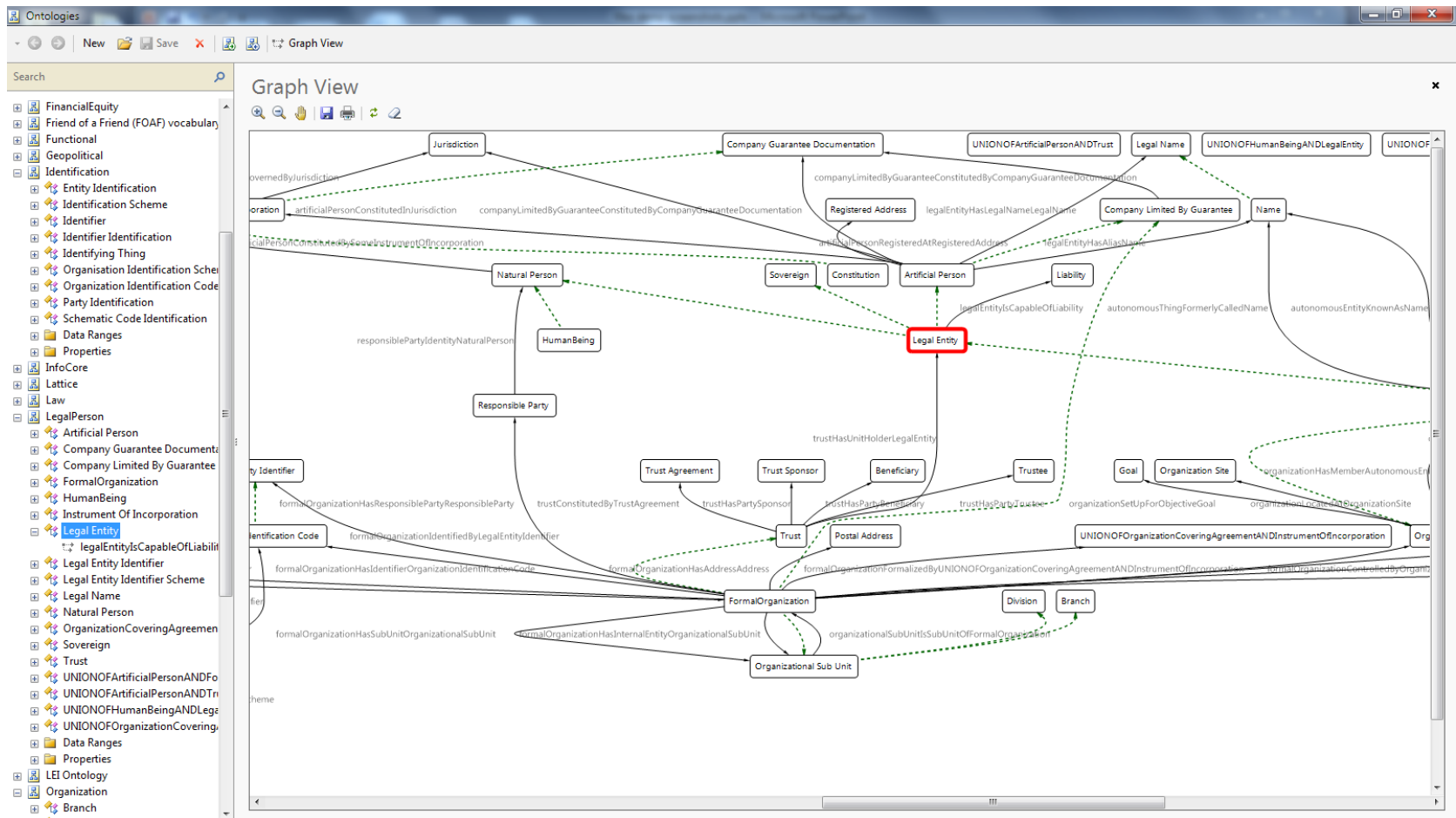
markit

Bloomberg

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

FIBO Standard

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.



Semantic Use Cases for Financial Services

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

1. Entity Management

qinsu/anzoweb/index.html#Outgoing-Address-Address

Semantic Use Cases for Financial Services

2. Investigation, Surveillance & Monitoring

IBM ANZO ON THE WEB

localhost/anzoweb/index.html

Suggested Sites: file:///C:/Document... Free Hotmail Web Slice Gallery Imported From IE Personalize Your We...

Search Dashboard Lenses Filters Layout Refresh Toolbar Help System Administrator

Welcome All Surveillance Employee Surveillance Revenue Models

Linked Data Sets Data Types On watch list Deal team member Security

show sort details

- US Bancorp (4)
- KRAFT FOODS INC (4)
- Nike (4)
- PFIZER INC (3)
- CISCO SYS INC (3)
- BOEING CO (3)
- Sears (3)
- HOME DEPOT INC (3)
- INTERNATIONAL BUSINESS MACHS (3)
- WAL-MART STORES INC (2)
- Lockheed Martin Corporation (2)
- Visa Inc (2)
- Verizon Communication (2)
- Wells Fargo (2)
- Morgan Stanley (2)
- Dell Inc. (2)
- AT&T (2)
- COCA COLA CO (2)
- TRAVELERS COMPANIES INC (2)
- JOHNSON & JOHNSON (2)
- CATERPILLAR INC DEL (2)
- Goldman Sachs (1)
- Great Plains Energy (1)
- Expedia Inc. (1)
- Gamestop (1)
- Molsen Coors Brewing Co (1)
- 3M CO (1)
- BLACKSTONE (1)
- Yum Brands (1)
- Sony (1)
- UNITED TECHNOLOGIES CORP (1)

Employee Trades

Wato...	Employee	Security...	Cusip	Ticker	Trade data	Buy/Sell	Trade po...	Public/Pr...	Position	Title	Location	Manager
3M CO	John Cronin		88579Y101	MMM	Common	Buy	Ops	Public	450	VP	Clt	Susan Armstrong Jose Wilson
AMERICAN EXPRESS CO	Christy Wright	debt	025818109	AXP	3.825 May '22	Sell	Ops	Public	1,500	D	Nash	
AON	David Maura		200168106	AON	Common	Buy	FID Research	Public	2,000	VP	SF	Gary Palmer
AT&T	Billy Ingram	Debt	001957109	T	Common	Buy	Ops	Private	100	MD	Atl	Rita Liu
AT&T	Mike Cummings		001957109	T	Common	Buy	ECM	Private	100	MD	NY	ECM / Chris Bartlett
BLACKSTONE	Joe Pelligrini		09253U108	BX	Common	Sell	IT	Private	1,400	D	Atl	Bryce Zimmerman
BOEING CO	Chris Cicoletti		097023105	BA	Common	Buy	Audit	Public	240	VP	Phi	Jesse Sommers
BOEING CO	Gary Schwake		097023105	BA	Common	Buy	Legal	Private	450	MD	Clt	Jay Powers
BOEING CO	Mark Griffin		097023105	BA	Common	Buy	Technology IB	Private	250	MD	NJ	Lucas Jackson
CATERPILLAR	Dwayne		149123101	CAT	Common	Buy	Ops	Public	2,000	VP	Rich	Jerry

Showing 1 - 50 of 74

Region selector

Employee trends

Document: rios-frenkel.ani

LAST MODIFIED: 8/13/2012 05:32PM

To: Grant Rice
From: Daniel Frenkel
Re: news
Date: 5/30/12

You know that beer company we were talking about the other night? Things are getting close.

[KB: Individual] (2)

Ready

Semantic Use Cases for Financial Services

3. Research and Intelligence Platform

ANZO ON THE WEB

Search Dashboard Lenses Filters Layout Refresh Toolbar Help

Welcome Financial News Analyst Earnings Estimates News Reader

Covered Company

[+] show sort details

- Alere Inc. (2)
- Apple (3)
- Apple Inc. (1)
- Apple Inc. (1)
- BB&T Corp. (1)
- Best Buy Co Inc (2)
- Best Buy Co. Inc. (2)
- Crocs Inc. (2)
- Dick's Sporting Goods (2)
- Heckmann Corp. (1)
- Heckmann Corporation (1)
- International Paper Company (4)
- Joy Global Inc. (2)
- Nokia Corp. (4)
- Nokia Corporation (4)
- RadioShack Corp. (2)
- RadioShack Corporation (2)
- Skullcandy Inc. (2)
- Target Corp (2)
- Target Corp. (2)
- Target Corporation (2)
- Tempur-Pedic International Inc. (4)
- Trade Me (4)

23 choices | fewer

What can I do next? Analyst Estimates

Article	Earnings Estimate Extraction	Source	Analyst	Covered Company	Metric	Fiscal Year
Analyst: Apple's Best Defense is a Strong Offense	and his fiscal-year 2014 estimate from \$55.85 UBS to \$52.80 per share	UBS	Steve Milunovich	Apple	Earnings Per-Share (Diluted)	
Analyst: Apple's Best Defense is a Strong Offense	Milunovich reduced his profit estimate for fiscal-year 2013 from \$47 to \$44.68 per share, and his fiscal-year 2014 estimate from \$55.85 to \$52.80 per share	Commonwealth Bank	Alice Bennett	Trade Me	EARNINGS	
Analysts tip 10% revenue drop for Fairfax Media	Commonwealth Bank analyst Alice Bennett expects revenue of \$1.104 billion	Commonwealth Bank	Alice Bennett	Trade Me	Revenues	
Analysts tip 10% revenue drop for Fairfax Media	Ms Bennett estimates EBITDA at \$220 million and net profit at \$82.8 million	Commonwealth Bank	Alice Bennett	Trade Me	EBITDA	
Is Apple Capitulating?	Silver cut his earnings estimates for fiscal year CLSA 2014 to \$46.62 a share from \$51.71		Avi Silver	Apple Inc, Apple Inc.	Earnings Per-Share (Diluted)	
Is Apple Capitulating?	Silver cut his earnings estimates for fiscal year CLSA 2014 to \$46.62 a share from \$51.71		Avi Silver	Apple	Earnings Per-Share (Diluted)	
4 Stocks With Positive Upgrades And How To Invest	For 2013, analysts are predicting an EPS of \$0.07 with revenue of \$38.58B			Nokia Corp., Nokia Corporation	EARNINGS Per-Share (Diluted)	2013

Showing 1 - 8 of 38

Find Next Instance Zoom In Zoom Out Orientation

Annotation

ENTITY: Silver cut his earnings estimates for fiscal year 2014 to \$46.62 a share from \$51.71

TYPE: AnalystEarningsEstimate

INSTANCES: 1

FILE: Is Apple Capitulating? - CNBC.com

LAST MODIFIED: 3/11/2013 12:11 PM

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 lull, 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.

Cramer: Market Has 'Great Faith in Bernanke'

Nuance Bulls Look for a Bounce

Can Apple Stock Come Back After Losing Quarter Billion?

Retail Growth Challenges Ahead: Analyst Hedge Funds Heart Google

Facebook Better Than Google in Near Term: Analyst

Pharma Bulls Roll With ETF Trade

7 Reasons to Buy Best Buy: Analyst

BY THE NUMBERS

Dow's Friday Winning Streak: Going on 10

Can Gold Stocks Regain Their Luster?

Will Transports Drive the Dow Higher This Year?

Who Benefits From High Gasoline Prices?

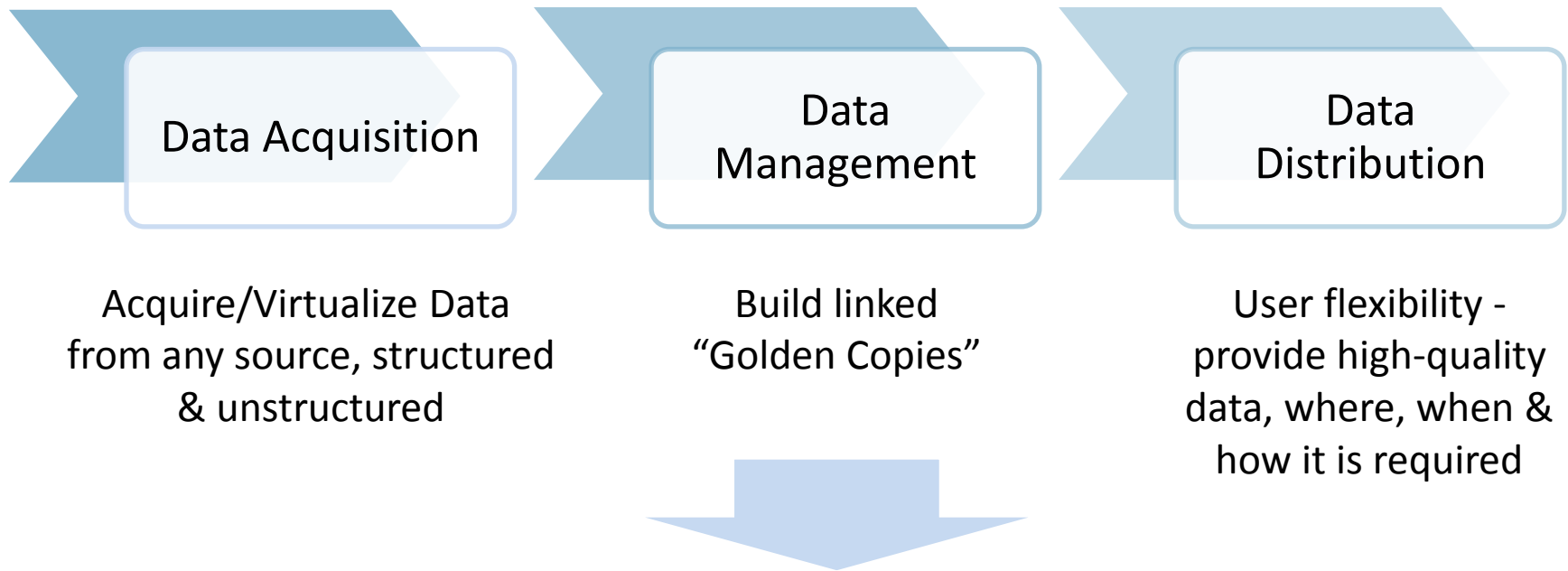
US Credit Risk Appetite Signals a 'Sell'?

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

Semantic Use Cases for Financial Services

4. Enterprise Data Management

Full Semantic implementation across EDM lifecycle



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

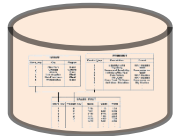
EDM: Acquisition

Data Acquisition

Data Management

Data Distribution

E
x
a
m
p
l
e
s



Counterparty
Data from RDBMS



Reference Data &
Vendor feeds



Enterprise Data –
structured &
unstructured



Configurable
Workflow

- 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

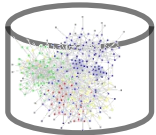
Anzo for EDM: Management

Data Acquisition

Data Management

Data Distribution

E
x
a
m
p
l
e
s



Graph Store

- Business level models and terminology to manage golden copies across varied data sources



Industry Ontologies

- Flexible data model - over comes RDBMS/ETL challenges with change



Business Rules Engine

- Operationalizes industry standards including FIBO, FIRO, SBVR, LEI,..



Network Analytics

- Enables discovery of new relationships in the data

Anzo for EDM: Distribution

Data Acquisition

Data Management

Data Distribution

E
x
a
m
p
l
e
s



Relational Replication

- Supports multiple output formats – SWIFT, XBRL, RDBMS etc



Web Dashboards

- Read/write configurable web dashboards with Excel-type analytics



“Live” Excel Connectivity

- Bidirectional Excel connectivity & management

ALGO

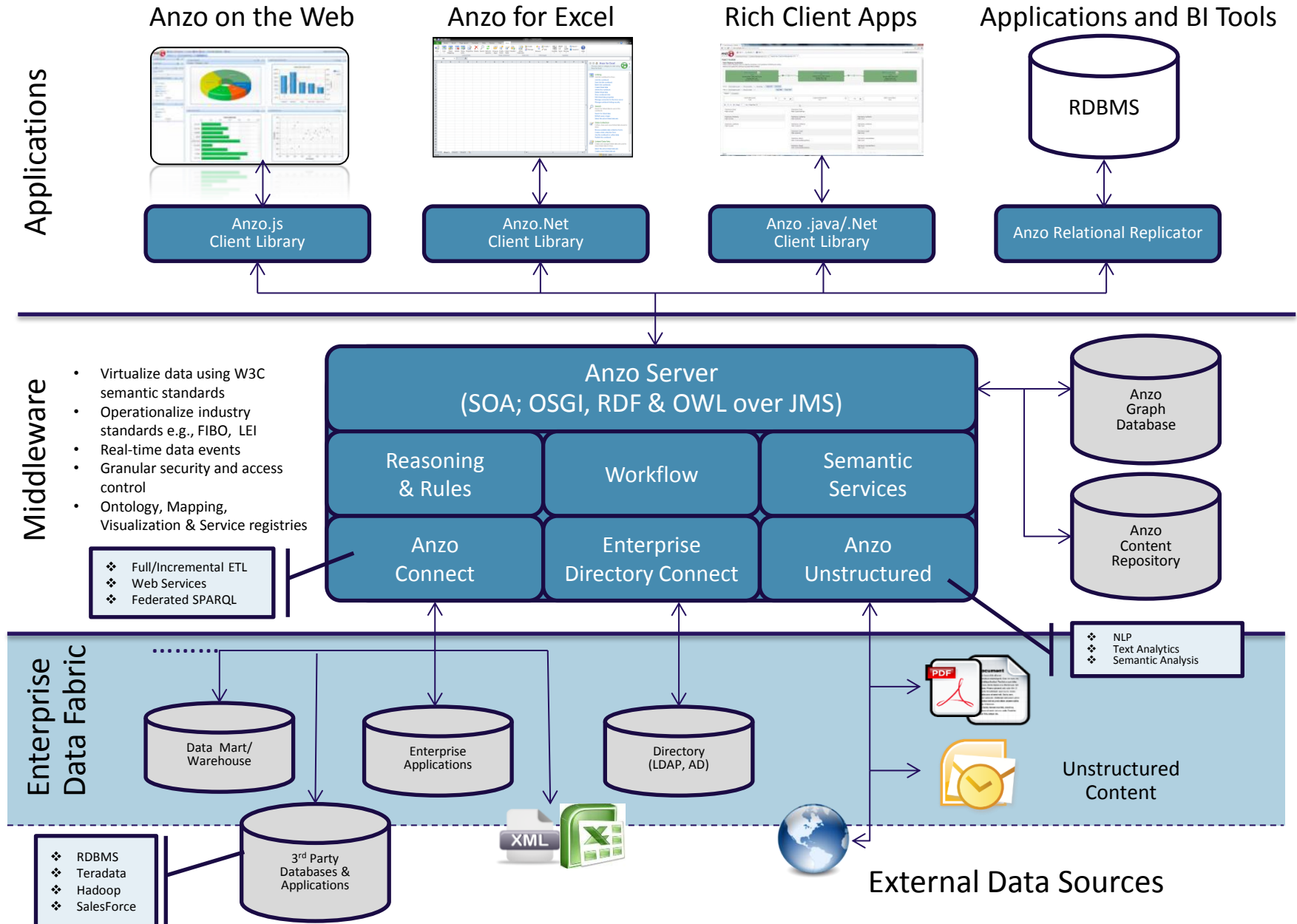
Third-party Tool integration

- App development platform – pre-packaged and custom
- Easily integrate third party analytic tools

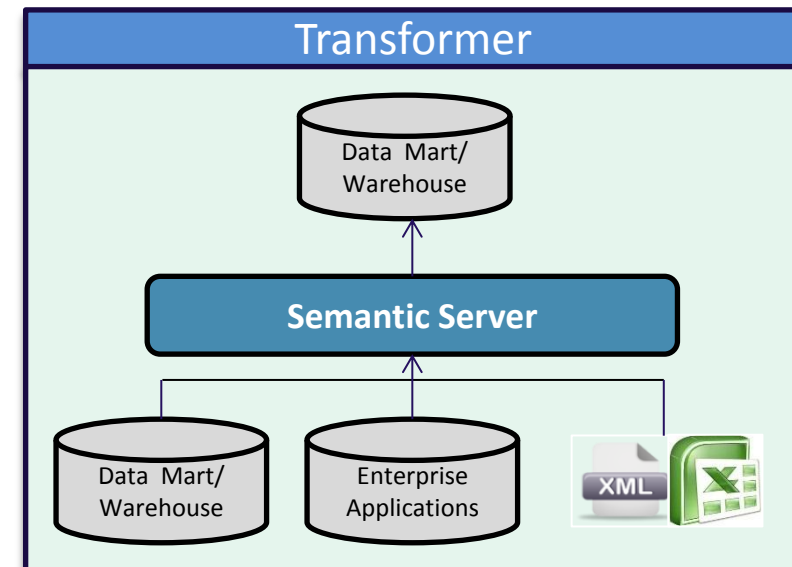
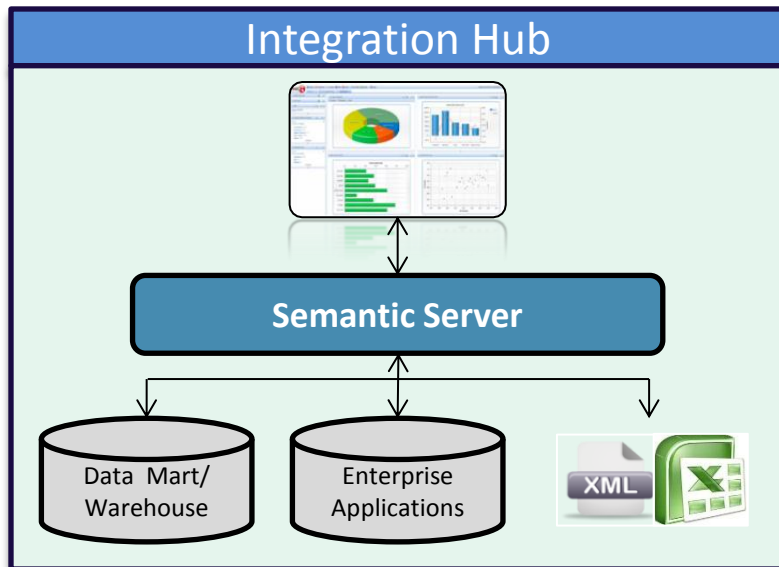
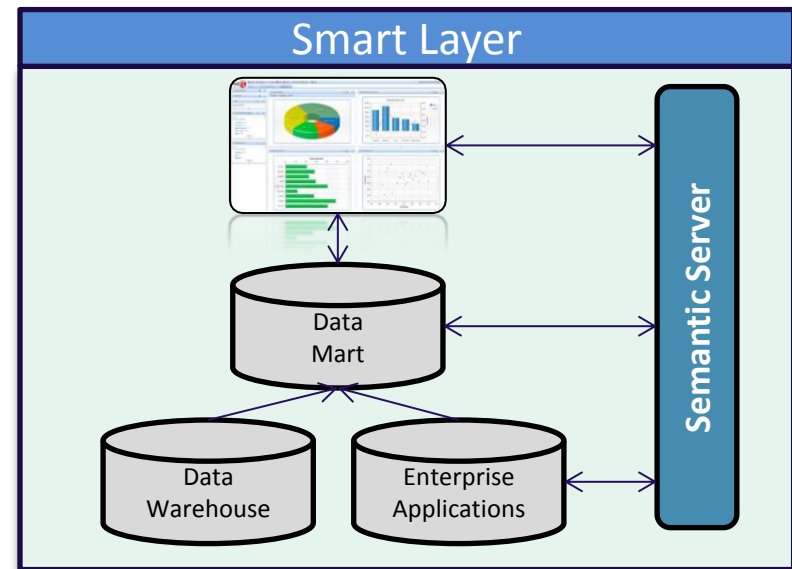
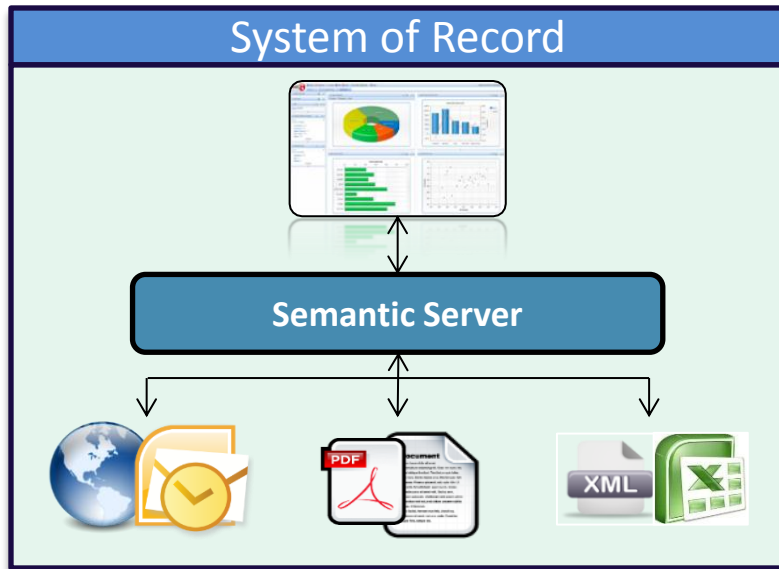
5. Information Landscape

- **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



Potential Deployment Models



Thank You

Marty Loughlin, Vice President

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