XBRL Taxonomy Extension Comparability Issues
And
Potential Semantic Web Solutions

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Good Morning Research – a Softpark Service
Topics

- Taxonomy Extensions Architecture and Data Organization
- Comparability Issues due to Extensions for
  - Filers
  - Regulators
  - Technology Vendors
  - Data Aggregators and Distributors
  - Institutional Investors (Sell-Side)
    - Wall Street experience
  - Institutional Investors (Buy-Side)
    - Australian Hedge Fund experience
  - Retail Investors
    - Bombay Stock Exchange experience
- Comparability Issue due to Trust Considerations
- Potential Semantic Web Solutions
XBRL Architecture

Source: IFRS Taxonomy Guide 2009
Wall Street View - Data Will Be A Commodity

Expert View

Sanjiv Das
Former Managing Director
Morgan Stanley

“Data will be a commodity,
but
organization of data
may not be a commodity”

Strategic View

Data
Information
Analysis
Insights

Filers/Companies
SEC Filings (10-K/10Q)
Investor Presentations
Annual Reports

Data Providers/
Sell-side Analysts
Data Aggregators
Valuation/Forecast Models
Ratings
Stock Recommendations

Buy-side
Analysts
Consensus Estimates
Trading Strategies
Screeners
Back - Test
Comps
Portfolio Construction
Risk Management

GoodMorning
Research

LongTail View
Wiki-Tagged
Data
Organization
Process

Long Tail of Data
Organization

World of Accounting
(GAAP)
World of Analysts
(Industry Specific Taxonomies)
World of Investors
(Folksonomy)

50 to 100
common Financial
Metrics for
• Income
Statement
• Balance Sheet
• Cash-flow

Additional 2,000 +
unique Financial Metrics
for
• Financial Modeling
• Valuation
• Forecasts,
• Trading Strategies

Additional Unlimited,
unstructured
‘localized’ synonyms for many Financial
Metrics for
• compliance with country-specific regulators
• proprietary financial modeling frameworks
• lack of any appropriate metrics in GAAP or
readily available taxonomies, resulting in –
Line 6 Items on 10-K, MDAs, and Footnotes

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XBRL Taxonomy Extension
Comparability Issues
Main objective for extensions is to increase the usability of Core Taxonomy

Types:

1. Entity-Specific Extensions
   i. Adding extended link roles (ELRs)
   ii. Adding concepts
   iii. Adding links hierarchies
   iv. Adding links dimensions

2. Receiving FIs Extensions
   i. Reuse of concepts in other reports
   ii. Creating new hierarchies
   iii. Adding new disclosures, etc.

Reference: IFRS Taxonomy Guide 2009
### Identifying Comparability Issues

#### EDGAR Dashboard

This Dashboard ([View as XML](#)) represents the most recent SEC filings, and was run Tue Sep 29 21:01:04 UTC 2009.

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- If you are a software vendor and would like to improve the quality of your software product, call us.
- If you are interested in more detailed data analysis, please let us know.

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**Source:** Cliff Binstock, XBRL Cloud, [http://edgardashboard.xbrlcld.com/edgar-rss-index.html](http://edgardashboard.xbrlcld.com/edgar-rss-index.html)

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Information Supply Chain

Filers

- Raw Data (Excel, Text)
  - XBRL Files 1
- Raw Data (Excel, Text)
  - XBRL Files 2
- Raw Data (Excel, Text)
  - XBRL Files n

Data Aggregation & Distribution

- Data (files) Aggregation
- Data Extraction/Normalization
- SQL Database

Analytics

- Comps
- Screens
- Valuations
- Portfolio Construction
- Risk Models

Non-XBRL Data

- Market Data, Transactions Data
- Fixed Income Data
- Analysts Forecast & Historical Data
- Currency Data

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Comparability Issues for Filers

• Filers are driven by regulatory compliance and meeting deadlines with error free filings

• Comparability issue are primarily with their own previous filings

• Taxonomy extension is onerous work, but preferred for legally precise disclosures
Comparability Issues for Regulators - 1

- Taxonomy extensions -
  - Help with more precise and detailed/transparent data, for better analytics (such as banking regulations, capital to risk weighted asset ratio, Tier I capital ratio, compliance with Basel II, etc.)
  - Makes it more difficult to compare apples-to-apples
• Taxonomy extensions reduce standardization and make interoperability more difficult.

• Comparing same company data from quarter to quarter and analyzing re-statements is more difficult.

• Adopting a maintenance program to update the existing taxonomy on demand and managed by the XBRL jurisdiction amounts to increased work for the taxonomy management (definition of acceptance criteria, editing, testing etc.)

• Countries like India prohibit XBRL Extensions and use a pre-tagged XBRL blank form to be filled by the filers.

• Italy uses a similar approach with an option to submit an additional PDF file for more detailed financials with taxonomy extensions.
Comparability Issues for Technology Vendors

Before (HTML, PDF)

• XBRL Taxonomy extension is a manual process requiring accounting skills
• Few technologists on XBRL projects have accounting domain knowledge
• Few Accounting experts have technology domain knowledge
• Communication of accounting terms, adjustments, and technology options between two expert areas is generally challenging

After (XBRL ZIP)
Comparability Issues for Data Aggregators

• Data aggregators and distributors have not embraced XBRL in any significant way.

• When they do, taxonomy extensions will help them in extracting deep and transparent insights for Alpha driven analytic tools.

• Taxonomy extensions will amount to more complex and expensive technology development.
Comparability Issues for Sell Side Inst. Investors

Wall Street Sell-Side Experience:

• XBRL is still early in its adoption on Wall Street
• Sell-side research analysts would prefer XBRL taxonomy extensions for deeper insights and increased transparency reasons
• Comparability Issues due to proprietary Accounting and Valuation frameworks and taxonomies (not XBRL)
  • Proprietary accounting adjustments for Pensions, Leases, Valuations
  • Business rules for differences in fiscal period end dates
  • Adjustments for hyper-inflationary economies
• Comps analysis requires co-mingling reported data with historical data, forecast data, index data, currency rates and live price data
Australian Hedge Fund Experience:

- Trading on multiple exchanges – Australia, Hong Kong and Singapore
- Hardly any tools available for consuming XBRL data for Portfolio Construction and Risk management
- Sell-side research lacks sufficient coverage in emerging markets, waiting for XBRL data for Buy-side Research
- Limited data for back testing investment strategies for BRIC
- Custom buy-side projects slowly under way, with an eye to acquire XBRL data for free or at commodity pricing
- Taxonomy extensions needed to support global focus
Comparability Issues for Retail Investors

POC: Bombay Stock Exchange Filing Data in RDF with ICAI/IFRS Taxonomy XBRL Tags

- No direct impact to Retail investors
- Most commonly they rely on their financial advisors, online services such as Yahoo! Finance, or their broker web site for their investment Research.
- XBRL taxonomy extensions, for most part, are invisible to retail investors.
Comparability Issue Due to Trust Consideration
Comparability Issue: Trust

Potential Semantic Web Solutions:

TripAdvisor, eBay, Flickr, Amazon

Buyers Beware

Authored and Edited by experts & non-experts

Authored and Edited by Selected Experts

Folksonomy (Wiki-tags)

Taxonomy Extensions

Core Taxonomy

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Potential Semantic Web Solutions
Semantic Web & XBRL Architectures

Semantic Web (Layered Cake Diagram)

- User Interface & Applications
  - Trust
  - Proof
  - Unifying Logics
  - Query: SPARQL
  - Ontology: OWL
  - Rule: RIF
  - RDFS
  - Data interchange: RDF
  - XML
  - URI/IRI

XBRL

- TAXONOMY
  - LINKBASES
  - SCHEMA
  - Element
    - PRESENTATION
    - REFERENCE
    - CALCULATION
    - DEFINITION
    - LABEL

DTS

TAXONOMY EXTENSION

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In Closing - Mash-up

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Proof of Concept:
Data Quality Heat Map

- RDF metadata
- XBRL Taxonomy
- Sparql Search
Questions?
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Thank You