Data, frameworks, and financial instrument identification

Use of the Financial Instrument Global Identification (FIGI) standard

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Challenge

• Global, cross-jurisdictional, cross-functional view
• Multiple identifiers exist for a single financial instrument and differ based on;
  – Asset type
  – Legacy embeddedness
  – Exchange/Venue
  – Vendor
  – Market / jurisdiction
  – Functional use (front/mid/back office)
  – ….and so on, most on organic generation/growth
What does this challenge look like?

**data interchange complexity**

*Simplified example of data flow in trading and settlement process*

Multiple masters, typically by function, division, and acquisition/merger

67% of firms maintain 2 or more security masters.

On average, 10% have more than 5.*

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*TABB Group report; “Building a Framework for Innovation and Interoperability,” March 2017 (survey of over 200 global data professionals)
simple answer…

“Just use one ID…”

Not so simple….

- Multiple contexts; some ID’s infer more (i.e. ‘tickers’ typically specific to one exchange, national ID to one market, international ID’s non-specific)
  - Specific inferred data drives different processes and routing
- Multiple markets, all with different national standards (both by venue and jurisdiction)
- Embedded codes in different legacy systems (i.e. Trading systems built around specific ‘tickers’)
- Akin to trying to solve multiple electrical plug standards by converting to single plug standard;
  - Good, in theory, but practical implications:
    - Embedded manufacturer and consumer base (legacy)
    - Significant ‘conversion cost’
    - Politics – which one ‘wins’?
So, the problem statement....

How to define something ‘atomically’ as well as in various contexts, yet maintain provenance, integrity, accuracy and quality?

– Water
  • Easy to represent chemically as H₂O as atomic ‘concept’
  • But H₂O doesn’t indicate if it exists as ice, water vapor or liquid (context/state). Also sub-varieties; i.e. snow, slush, etc
    – Also: “aqua” vs “water” (language translation)
    – Also: ‘Eskimo’ Inuktitut (single language nuances); multiple words for ice and snow in different contexts

– Biological taxonomy versus language use;
  • ‘Cow’ is a cow. So is a ‘calf.’ Bull, Heifer, Steer.
  • Proper term is ‘Cattle’ or ‘bovine’ but many use the terms (cow, etc) interchangeably unless the nuance matters to them

– Each instance is ‘fungible’ with the other – via transformation but how do you model that in a representative data model?
  • This is a basic problem with most traditional data approaches in financial services
    – No fault, but traditional approaches have taken a ‘human language understanding’ approach
    – Mix of technology limitations and lack of understand about data
  • Rise of ontology (the science) and metadata (the tool for implementation) as a new solution

– Instrument identification is a specific example where these issues present themselves in financial services
  • Concept of equity share for Firm XYZ
  • Exists in many ‘forms’ (contexts)
  • Change of one ID can force a cascading effect especially where ‘intelligence’ is embedded, threatening data quality
How to address?

Use a framework

A metadata framework can act as an adapter, and is extensible for new innovations
FIGI in use as a framework

Example; Thai Beverage PCL Common Stock

‘Primary’ issued in Singapore as foreign share
Exists in **33** different tradeable forms
Quoted on global venues in **5** different currencies
Tradeable in **14** different jurisdictions/countries (on and off-exchange inclusive)
Deutsche Borse-specific listing also traded on Tradegate (MTF)

_Symbology:_

**33** different unique exchange-based tickers
**3** different ISINs (due to some uniqueness of Thailand issuance)
**4** different SEDOLs
Plus; CINS, Singapore ID (Y92), Common Code, WPK ID, other vendor codes, internal codes, and other national IDs

_In all, between **50-100** different identifiers for the “same” common stock, with no specific relationship between any two identifiers or the associated descriptive data (i.e. each identifier is effectively its own ‘island’)_
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Diving into one example

FIGIs can be self-referential;
- ‘children’ that dive into more specific related metadata reference any and all ‘parents’ that have less related metadata to satisfy other contextual uses.
- Alternate representations (i.e. an MTF listing of an ‘official’ listing)

<table>
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<th>FIGI</th>
<th>Exchange name or description</th>
<th>FIGI Composite</th>
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Additional FIGIs included in metadata for MTF listings

‘Ticker’ level has exchange

‘Composite’ level has specific market currency

‘Share Class’ level has only has issue currency

Depending on context of use, metadata related to a certain FIGI will vary. Data here is not exhaustive, but simple example for illustration
Key points

• Metadata, **framework** approach
  – Actual ‘identifier’ is semantically meaningless and permanent (does not change, i.e. due to simple corporate actions, other situations)
  – Standard includes the metadata, not just the identifier

• **Official standard** of the Object Management Group (omg.org), an independent, international, technology standards consortium (no restrictions on membership)
  – Specialists in technical solutions, data, and ontologies

• **Open data**; no ‘cost recovery’, no fee or license for use, access to data or documentation

• Based on new data principles around metadata, relationships and ontologies

• Does not replace existing identification systems; Is meant to **unify and enhance** those systems (‘universal adapter’)

• Fully accessible via **OpenFIGI.com** (no restrictions)
Regulatory and Industry Benefits

- **Data Management and Quality**
  - Ability to properly associate different legacy identification systems based on different sets of metadata without individually mapping every dataset
  - Provides methodology for aggregation of data across jurisdictions, silos, functional areas
  - Provides methodology for ‘apples to apples’ comparison of financial instruments based on context
- **System interoperability**
  - Enables integration of legacy systems to new development through use of metadata extensions without requiring data model changes in legacy systems or enforcing legacy models on new development
- **Standards interoperability**
  - Can incorporate any data points within metadata, regardless of origin
  - Can be utilized in ISO15022/ISO20022, FIX, FIBO, etc
  - standard and jurisdictionally independent
- **Quickly adapt** to market changes via metadata extensions without need to update the standard
- **Based in Open Data**
  - Freely available, no direct cost recovery on identifier and primary related metadata or services to access that data
  - Expectation that data is output of normal course of business for a provider, but allows for value-add services as long as core data is available separately and remains open
  - Provide Regulators a non-fee liable methodology for collecting financial instrument related data
- **Open governance framework**
  - Any firm can seek to become a Certified Provider (akin to an LOU in the GLEIF model)
  - Especially relevant for ‘specialists’ in specific, more esoteric asset types (such as commodities)
Challenges

- **Data, as a discipline, is still ‘young’**
  - Lack of expertise throughout the industry, especially in decision-making roles
  - Embedded legacy solutions, methods and decision making

- **Misperceptions**
  - FIGI viewed as an ‘identifier’ versus framework *(related to above issue about data expertise)*
  - Some data vendors view FIGI as a ‘competitive’ product and actively market against its use
    - Some view as ‘Bloomberg’ solution, versus ‘OMG standard’
    - Encountered resistance within ISO process, chiefly from representatives from institutions that issue identifiers
    - Also some USA/European politics at play

- **Differing views on ‘standards organization’**
  - Object Management Group is well known, but mainly in specific circles (akin to IEEE or W3C) vs an organization like ISO
  - Financial Services Regulators are not as well versed in standards organizations other than ISO

- **Regulatory inclusion**
  - Benefit to be included in regulation, but wish to avoid “mandates” for use
  - USA-based Regulators have been clear about desire to avoid mandates; how to encourage adoption?

- **Certified Providers** and gaps in coverage (non-covered assets and more granular ‘children’)
  - Primary data sources (exchanges, etc) so far have preferred to send data and receive back FIGI vs becoming Certified Provider themselves
  - There are gaps in coverage and jurisdictional nuance without more CP’s with ‘specialist’ knowledge

- **Adoption and maturity**
  - Included by 137 data vendors worldwide, but with varying levels of support/promotion
  - Over 400 non-Bloomberg financial firms have adopted and use to varying levels, in addition to direct Bloomberg clients
ANSI / SPRING collaboration

- Support and input from both standards organizations
- Agreement on use, approach, and enhancements can feed into Object Management Group and encourage wider use
- Use within country infrastructures alongside legacy methodologies can help ease extra-jurisdictional data management and reconciliation (low-hanging fruit, PoC)
- Re-introduce to ISO, if value found in national PoC analysis