



United Nations



The Noetic Approach

Data-Driven Architecture and Design, and the Use of Open Data for Active Data Management

Open Government Data Forum

April 28 – 29, 2014

Ritz Carlton | Abu Dhabi, UAE



- Noetic Partners is a team of data and technology experts focused on the Financial Services sector.
- We developed the Noetic Master Model to help our clients unlock the value of their data, and to solve their toughest information management problems. Noetic solutions help sophisticated organizations outrun the herd in the complex world of financial services.
- We provide our clients with frank assessments of business and product management capabilities, and data processing and analytic requirements, with the goal of improving financial and operational performance. Our solutions make new financial products and services possible and speed the time to market.
- Noetic brings decades of proven expertise with global bulge bracket investment firms, regional banks and investment management firms, government sponsored entities, data integrators, industry utilities, and other sophisticated organizations. Founded in 2008, our firm is focused on active data management solutions for finance, investing, insurance and regulatory requirements.

no·et·ic

[noh-et-ik] adjective

1. of or pertaining to the mind.

2. originating in or apprehended by the [reason](#).

Origin: 1645–55; < Greek noētikós intelligent, equivalent to nóē (sis) [noesis](#) + -tikos [-tic](#)

- Noetic solutions help clients make smarter business decisions, faster, leveraging enterprise data assets.

Experience With Best Practices

- Our experience is that every large company has persistent enterprise data management challenges, but some organizations have learned to manage data well.
- Our team has worked with some of the best:



Credit Origination
Credit Risk Management
Reference Data
Data Warehousing

Deutsche Bank



MBS Credit Analytics
Portfolio Analytics
Reference Data



We make home possibleSM

Reference Data
Loan & MBS Analytics
Data Warehousing



FannieMae

Reference Data
ETL & Data Warehousing
Process & Control Frameworks



Security & Counterparty Master
Data Warehousing



MBS Analytics



THOMSON REUTERS

Real Time Analytics
Real Time Data Integration



NYSE Technologies

Reference Data Product Strategy
Corporate Actions
Tick Data Warehousing



Reference Data
Data Warehousing

Bank of America



MBS Analytics

part·ner

npärt-nər also 'pärd-\\
archaic : one that shares : partaker

- an ally or companion.
- a member of a partnership.
- one of two or more parties who play together against an opponent or competitor.

— part·ner·less antonym oun \\



Instrument Reference Data
Real Time Surveillance

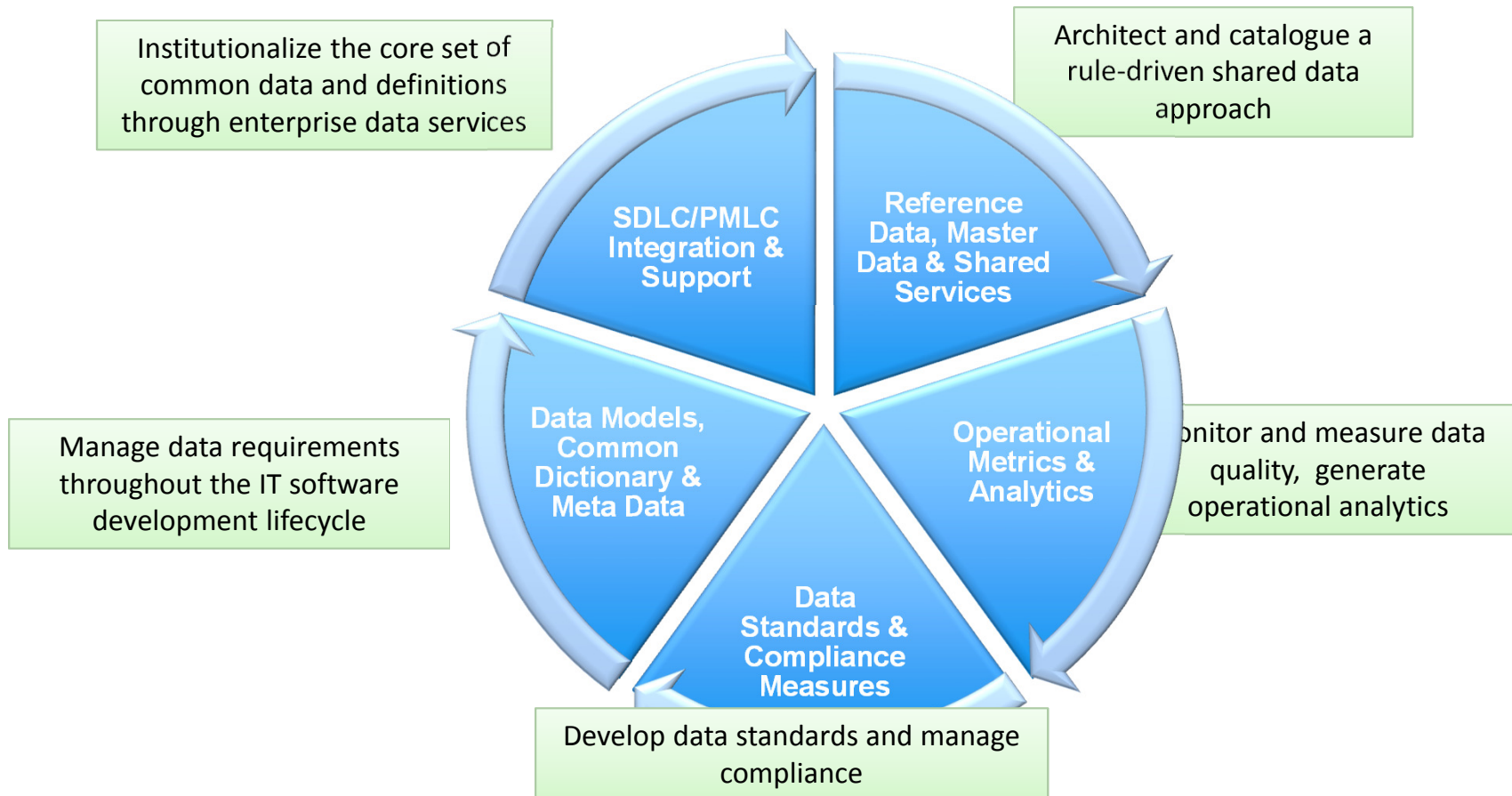


Data is “Fit for Use” when every user in enterprise business, financial and operational functions can access data of acceptable quality to perform his or her function.

Active Data Management™ is the continuous process of measuring and improving the fitness of data for use in business, financial and technology functions along key dimensions – including completeness, validity, timeliness and accuracy – in order to improve business performance.

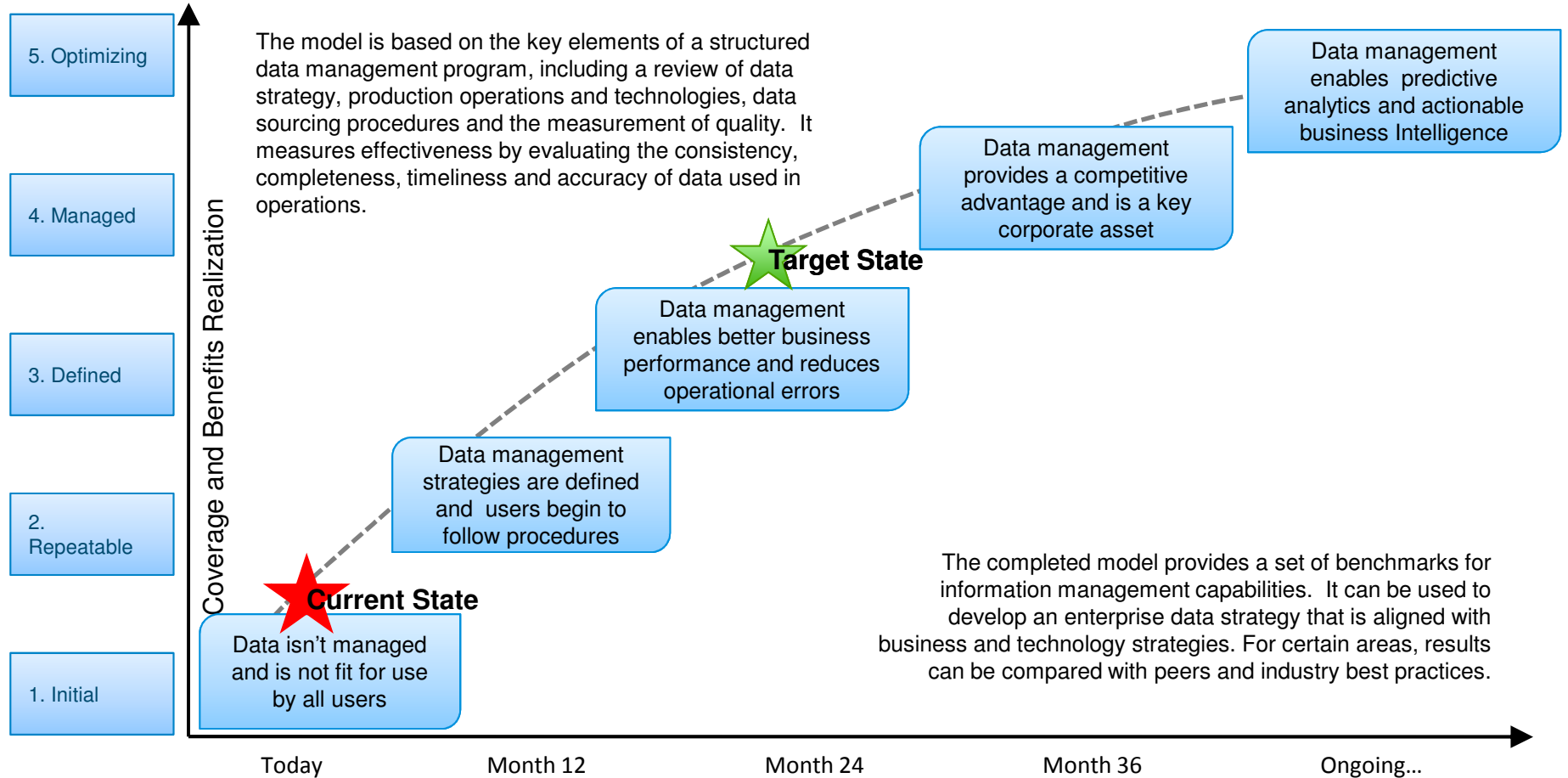
Best-in-Class Data Governance Activities

The operation of a mature Enterprise Data Governance program includes a series of integrated tools and processes that establish an accountability structure between business and technology organizations that includes robust communications and regular “dashboard” reporting.



Case Study: The Noetic Data Management Maturity Model

The initial maturity levels in most organizations are low. Improvements can be made through the formation and development of a Data Governance Program with accountability in certain management roles.



List of Industry Standards and Messaging Protocols

Standard	Description	Priority for GBM
ISO 20022	A comprehensive, overarching Financial Services Messaging standard for payments, securities, trade processing, card processing, and currency exchange.	Yes
FIXML	A set of messaging specifications for the electronic communication of trade-related messages.	Yes
FPML	The global standard for electronic dealing and processing of financial derivatives instruments, and facilitates sharing information on, and dealing in swaps, derivatives and structured products.	Yes
XBRL	A global standard for exchanging business information and delivering periodic financial reporting, such as financial statements and regulatory filings.	Yes
ISO 10382	Market Identification Codes (MIC)	Yes
ISO 10962	Classification of Financial Instruments (CFI)	Yes
ISO 3166-1	Country Codes	Yes
ISO 4217	Currency Codes	Yes
ISO 639-2/T	Language Codes	Yes
EnergyML	A set of industry standards for the oil and gas industry, including WITSML(tm) Standards for drilling, completions, and interventions, PRODML(tm) Standards for production, and RESQML(tm) Standards for reservoir characterization.	Maybe
FundsML	A European Mutual Fund XML standard that is emerging as a global standard for Mutual Fund formation and exchange.	Maybe
GeographyML	A set of standards for geospatial and location based services that may be of use for mortgage lending and commodity investing.	Maybe
RixML	A global financial industry standard for categorizing, tagging and distributing global investment research.	Maybe
ISO 15022	(replaced by ISO 20022)	No
ISO 7775	(replaced by ISO 15022)	No
MDDL	(replaced by ISO 20022)	No
NewsML	A media-type-independent, structural framework for distribution of multi-media news.	No
NTM	(superceded by FPML)	No
STPML	(superceded by FIXML)	No
SwiftML	(replaced by ISO 20022)	No

- The ECCMA Open Technical Dictionary (eOTD) is an open public registry of terminology from international and national standards, as well as, from industry associations. It resembles any other dictionary with the addition of public domain concept and terminology identifiers.
- The eOTD also provides a public registry of localizations. They are not literal translations of a term or a definition, but rather the terms and definitions used to describe the concept in a language as spoken in a specific region. For example, French as spoken in France, or French as spoken in Canada.
- Finally, the eOTD provides a public registry of concept mappings. This is very important because it allows different groups to maintain their own terminology while mapping to the terminology used by other groups. For example, mapping between the concept of, "interior diameter" and "bore." Both terms are used in different industries, but mean the same thing. The eOTD links the two concepts with the permission of the controllers of the two entries in the eOTD. This process is called a public mapping. In practice, eOTD identifiers are used to encode data turning it into unambiguous, language independent, portable data. To decode the identifiers you simply use the eOTD and look up the terminology associated with the identifier.
- The eOTD also conforms to ISO 22745, the international standard that defines the structure and administration of an open technical dictionary. The eOTD is available free to the general public through a web services interface. There is not a license required to use the eOTD. The eOTD concept identifiers are in the public domain, they may be used or distributed without license and can be safely embedded in data without the risk of creating a joint copyright.

The Dictionary

The Dictionary

Table of Contents

1. Subject Area: Party.....	9	Party Financial Item.....	41
Party.....	10	Counterparty Insurance.....	41
Bankruptcy.....	12	Counterparty Exposure.....	42
Party Address.....	13	Credit Rating Score.....	44
License.....	15	Contract Term Exposure.....	44
Organization.....	15	8. Subject Area: Counterparty Credit Risk Reference Data.....	45
Organizational Unit.....	16	Subsidiary Portfolio.....	45
Home Owner Association.....	16	Item Type.....	45
Non Profit Organization.....	16	9. Subject Area: Counterparty Performance.....	46
2. Subject Area: Company.....	17	Counterparty Adverse Action.....	46
Company.....	17	Performance Tracking.....	46
Financial Institution.....	17	10. Subject Area: Counterparty Performance Reference Data.....	48
Bank.....	17	Tier Type.....	48
Bank Account.....	17	Adverse Action Type.....	48
Auditor.....	18	11. Subject Area: Counterparty Relations.....	49
Service Provider.....	18	Counterparty Relationship.....	49
3. Subject Area: Counterparty.....	20	Seller Servicer Document Agreement.....	50
Counterparty.....	20	12. Subject Area: Counterparty Reference Data.....	51
Business Service Subscription.....	21	Freddie Mac Audit.....	51
Wire Account Instructions.....	21	Freddie Mac Form.....	51
Seller.....	22	Problem Identification Code.....	51
Originator Lender.....	23	Business Service Type.....	51
Mortgage Insurer.....	24	13. Subject Area: Government Agency.....	51
Seller Family.....	25	Government Agency.....	51
Servicer.....	25	American Indian Alaskan Native Native Hawaiian.....	51
Document Custodian.....	26	14. Subject Area: Regulatory Mandate.....	51
Funds Custodian.....	26	Regulatory Mandate.....	51
Broker Dealer.....	27	Service Member Relief.....	51
Warehouse Lender.....	27	15. Subject Area: Individual.....	51
Mortgage Broker.....	28	Person.....	51
Aggregator.....	28	Persons.....	51
Investor.....	28	Personal Employment.....	51
Servicer Family.....	29	Personal Residence.....	51
4. Subject Area: Seller Servicer.....	30	Service Member Employment.....	51
Seller Servicer Form.....	30	Borrower Persons.....	51
5. Subject Area: Vendor.....	31	Home Owner Education.....	51
Vendor.....	31	True Persons.....	51
Appraiser.....	31	16. Subject Area: Contact.....	51
Credit Repository.....	32	Party Contact.....	51
Realtor.....	32	17. Subject Area: Contact Reference Data.....	51
Attorney.....	32	Contact Role Type.....	51
Credit Bureau.....	32	18. Subject Area: Financial Data.....	51
Credit Rating Agency.....	32	Personal Asset.....	51
6. Subject Area: Account.....	33	Personal Real Estate Asset.....	51
Counterparty Account.....	33	Personal Expense.....	51
Organization Legacy Bifurcation Association.....	33	Personal Income.....	51
7. Subject Area: Counterparty Credit Risk.....	35	Personal Liability.....	51
Company Credit Rating.....	35	19. Subject Area: Credit Data.....	51
Eligibility Request.....	36	Credit Report Liability.....	51
Product Eligibility.....	38	Credit Liability Late Count.....	51
Counterparty Exposure Limit.....	39	Credit Liability Rating.....	51
Counterparty Auditor.....	40	Credit Report.....	51
Financial Report.....	40		

1. Subject Area: Party

An **Individual** or **Organization** of business interest to Freddie Mac. Freddie Mac interacts, directly or indirectly, with various Persons and Organizations. These are collectively referred to as Parties, or individually as a Party. As part of doing business with them, Freddie Mac collects data that facilitate:

- communications with Parties,
- assessment of progress towards meeting affordable housing goals,
- assessment of risk to Freddie Mac in its dealings with Parties, and
- assessment of Parties' performance.

Persons
The BDD is now focusing on two classes of Persons, loan borrowers and Freddie Mac employees. (Note: Individuals serving as contacts for organizations are treated as part of Organization.)

In the BDD, a Person may have one or more Personals. A Personal is an account of, or representation of, a person according to a set of descriptive data. For example, as part of the automated underwriting process (Loan Prospector), Freddie Mac collects data on loan borrowers in order to determine, prior to origination, whether it will purchase a mortgage.

Data on a loan borrower is also collected through sellers when an application An Individual or **Organization** of business interest to Freddie Mac.

Party

Dependents [Relationships - Party Address - License](#)
Subtypes [Organization - Person - Exclusive](#), [Exhaustive](#)
Subtypes [Organization - Person - Exclusive](#), [Exhaustive](#)

Name

The name of the Party.

Aliases

The alternative names of the Party.

Taxpayer Identifier Type

The kind of taxpayer identifier.
Specifies the type of identification number used by the Internal Revenue Service in the administration of tax laws. It is issued either by the Social Security Administration or the Internal Revenue Service.

Required	Taxpayer Identifier Type Code
Employer Identification Number	The EIN, also known as the federal tax identification number, which is used to identify a business entity.
Individual Taxpayer Identification Number	The ITIN, a 9-digit tax-processing number beginning with the number 9 and formatted like an SSN (NN-N-NNNN), which is only available for certain nonresident and resident aliens, their spouses, and their dependents who cannot get a SSN.
Preparer Taxpayer Identification Number	The PTIN, which identifies paid tax return preparers who don't want to disclose their SSN on returns they prepare.
Social Security Number	The SSN, provided to all U.S. citizens or residents with a legal Alien status.
Temporary Taxpayer Identification Number for Pending US Adoptions	The Adoption Taxpayer Identification Number (ATIN), a temporary 9-digit IRS number for individuals who are in the process of legally adopting a U.S. citizen or resident child but who cannot get an SSN for that child in time to file their tax return.
TIN	Tax Identification Number issued by Government for legal entity

Taxpayer Identifier

The value of the taxpayer identifier as assigned by the US IRS to the individual or legal entity.

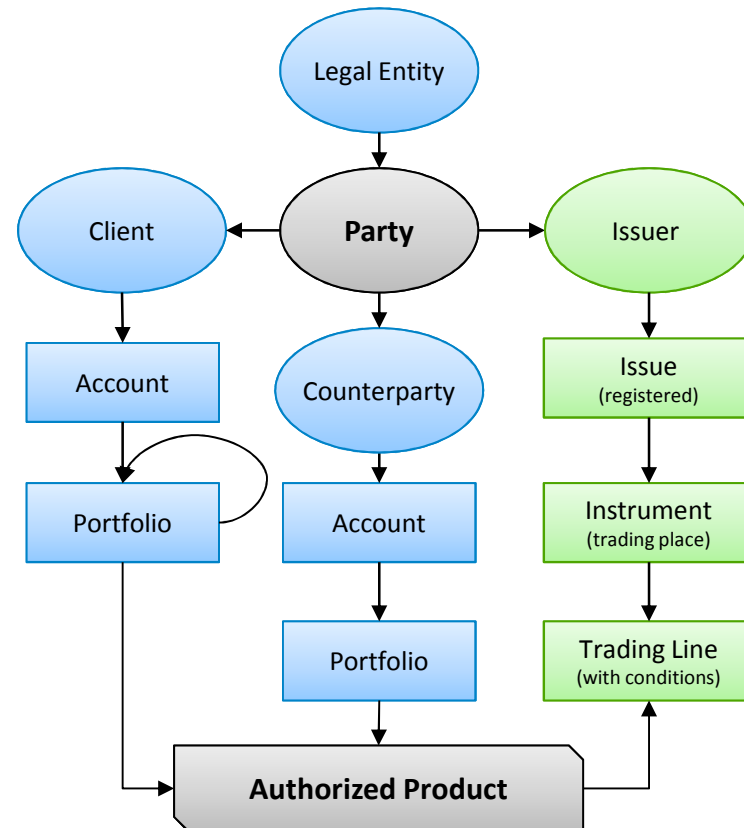
Required Identifier
Constraint The identifier must be in the form of XXX-XX-XXXX when Tax Payer Identifier is SSNWarning

Dictionary Statistics

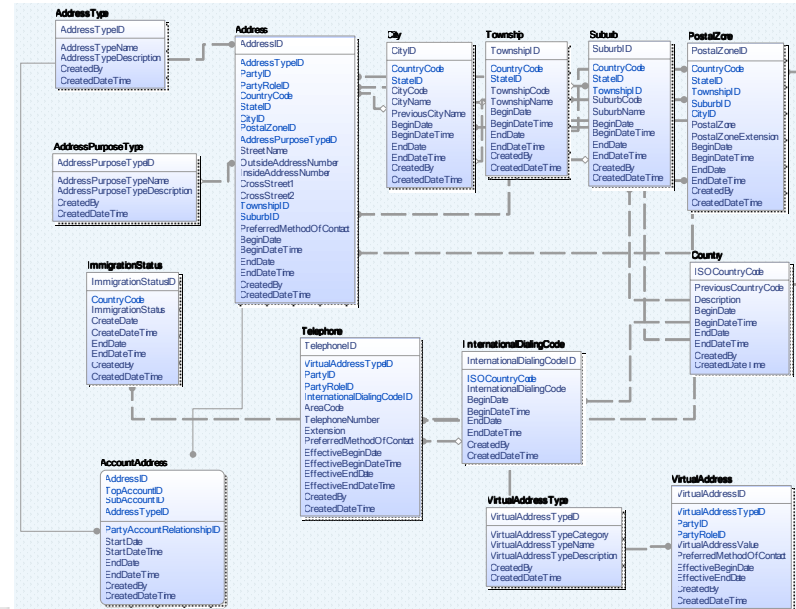
- More than 4,000 fully-defined attributes
- 800 defined entities
- 20 defined subject areas
- 2 domains
- Validated with business users in the Americas and EMEA, including 5 global and regional investment and commercial banks and 2 US government agencies
- Loaded into database extended properties and ER Model structures; maintained with a series of Noetic procedures
- Native DDL round-trip capability
- Multi-lingual

What is The Noetic Master Model?

- » A rich data model that can be used to implement a central repository for automated capture, cleansing, and distribution of asset indicative data including symbologies, pricing and fundamental content
- » A framework of establishing and maintaining data quality and consistency across multiple business functions and applications
- » The model for a container that can hold more than 10 million listed and derivative security identifiers and related attributes
- » The Noetic Master Model has been designed to support the following functions:
 - Back office processing
 - Clearing and settlement
 - Valuation of financial instruments
 - Regulatory reporting
 - Portfolio management and trading
 - Collateral Management
 - Internal and External Ratings
 - Pricing & Valuation
- » The model is described in 3NF-5NF ER and UML notation



- Noetic includes global locations for all Parties
 - » Physical (individual) & Moral (institutional) Parties
 - » Internal units, branches, offices
 - » Customer homes, offices
 - » Virtual (email, Facebook, Twitter, etc.)
- The granularity of Noetic addresses is precise
 - » Longitude & latitude
 - » ISO Country Codes
 - » Global, Regional and Local Postal Codes



Noetic Address Setup Screen

Address Type:	<input type="checkbox"/>	<input type="checkbox"/>	Special Address Type				
Street:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>				
Btw Streets:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>				
Outside #:	<input type="checkbox"/>	<input type="checkbox"/>	Inside #:	<input type="checkbox"/>			
Country:	<input type="checkbox"/>	<input type="checkbox"/>	Select Country	State:	<input type="checkbox"/>	<input type="checkbox"/>	Select State
City:	<input type="checkbox"/>	<input type="checkbox"/>	Select City	Township:	<input type="checkbox"/>	<input type="checkbox"/>	Select Township
Suburb:	<input type="checkbox"/>	<input type="checkbox"/>	Select Suburb	ZipCode:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Sources:

ISO: http://www.iso.org/iso/country_codes.htm

US: <https://www.usps.com/business/address-information-systems.htm>

Mexico:

<http://www.sepomex.gob.mx/ServiciosLinea/Paginas/DescargaC.P.aspx>

UK: <http://data.gov.uk/apps/uk-postcodes>

Geonames: <http://download.geonames.org/export/zip/>

- Over the past decade or so, a number of authoritative industry “messaging” standards have been developed through the collaboration of banks, broker-dealers, exchanges, industry utilities and associations, institutional investors, and information technology providers from around the world.
- The market participants who lead and have led these efforts share the vision of a common, global language for automated order management and trading of financial instruments.
- These authoritative, validated messaging standards should be used by market participants to inform internal reporting and business application development, including database and interface programs, and adoption of standards should improve information acquisition and reduce operational errors.
- Over time, these standards will converge and align, and adoption will yield further efficiencies.

Sample FIX 4.4 Codes from US NMS

Code	Time in Force Conditions
DAY	Day Order: An order to buy or sell which, if not executed, expires at the end of the 9:30 a.m.to 4:00 p.m. trading session on the day on which it was entered.
GTC	Good 'Til Cancelled Order (GTC) or Open Order: An order to buy or sell which remains in effect until it is either executed or cancelled. A good 'til cancelled order that is designated "Off-Hours eligible" and that is not also a stop limit order may be executed through the "Off-Hours Trading Facility" (as Rule 900 (Off-Hours Trading: Applicability and Definitions) defines that term).
OPG	At the Opening or at the Opening Only Order: A market or limited price order which is to be executed on the opening trade of the stock on the Exchange, and any such order or portion thereof not so executed is to be treated as cancelled.
GTX	Good 'Til Cancelled, executable through Crossing Session I
XPR	Xpress Order
NX	Automatic execution order (NYSE Direct +)

Code	BBO Qualifying Quote Conditions		
A	Slow Quote on the Offer Side	Code	Cancel/Correct Field 87
B	Slow Quote on the Bid Side	A	Not a Cancel Quote
H	Slow Quote on the Bid and Offer Sides	B	Cancel quote/Cancel Price Indication/Cancel Trading Range Indication
O	Opening Quote	C	Corrected Price Indication
R	Regular Quote		
W	Slow Quote due to a Set Slow list on both the bid and offer sides		

Suffix	Description
A	Class A shares
B	Class B shares
K	Non-voting
...	...more...
CL	Called. Examples include the following: ZZZ CL is the same as ZZZ/CL
CT	Certificates. Examples include the following: ZZZ CT is the same as ZZZ/CT
CV	Convertible. Examples include the following: ZZZ CV is the same as ZZZ/CV (ZZZ/CV)
CVR	Contingent Value Right. Examples include the following: ZZZ CVR is the same as ZZZ/CVR
Etc...	Many other suffixes...



- The Noetic Master Model is the most comprehensive industry solution for financial data management.
- Get Noetic!

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