Report of the FINANCE Breakout

Doug Burdick
Stephen Dennis
Laura Dietz
Mark Flood
Shawn Mankad
Edgar Meij
Jay Pujara
Louiqa Raschid
Ted Senator

Helping the Treasury Secretary monitor a problem scenario in near real-time

In the early months of 2008, an aide to Secretary Geithner realizes that the ongoing subprime crisis may likely result in some serious financial fallout. She is referred to the NSF and asks for help in monitoring the residential mortgage backed securities supply chain, in particular the securities associated with "toxic" financial institutions and subprime mortgages.

Financial / economic intelligence to inform mayoral decision making in Houston and San Juan

In the aftermath of a severe hurricane season and with the specter of mitigation to combat the impact of potential climate change, the mayors of these cities have asked the NSF Smart and Connected Cities program for financial + economic data / tools .

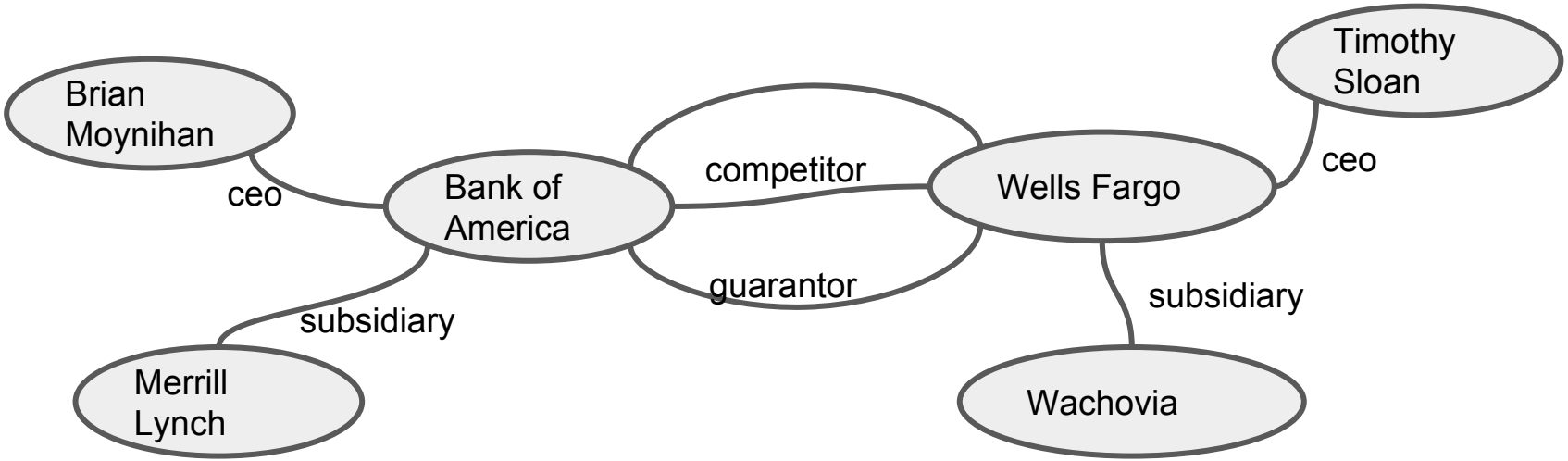
- *Rank neighborhoods to receive $$ for recovery efforts.*
- *Identify areas that are considered to be high risk.*

Making small businesses more competitive

Large corporations can afford to develop in-house solutions or to contract with service providers, e.g., to identify their Top K competitors. We will develop a KnowYourEntity KYE OKN for small businesses to obtain business intelligence relevant to their sector.

- *Identify Key Performance Indicators (KPI).*
- *Increase effectiveness and more competitive.*
- *Top K competitors, partners, etc.*

Exemplar OKN:



Exemplar queries:

- *I have a credit card from X. Who can access my data?*
- *What entities are incident to the supply chain of Y?*
- *Is company Z “too big / central to fail”? What assets belong to Z? What is the “total exposure” to Z?*
- *How many businesses hired employees in county T?*
- *What are the Top 10 questions posed to “Giri for DSfin”?*
- *What is the impact of the diesel emissions scandal on Daimler AG?*
- *How has cash flow impacted equity prices in sector V?*

Goal 1: Simple Ontologies

- *Hierarchical relationships (parent, partial owner, investor, trustee, etc.).*
- *Relationships between pairs of entities.*
- *Concepts covered in FINANCE 101.*
- *Events that may have a causal impact on the financial health of an entity.*

[Financial concepts are already captured informally in Wikipedia / DBpedia / Yago.]

Goal 2: Take me to your Holding Company

A repository and services to identify a company and all of its subsidiaries and affiliates and partners.

- *Regulators can use the repository to determine the exposure w.r.t. some financial entity.*
- *Consumers can use the repository to determine the extent of their data exposure.*
- *Detect fraudulent / illegal transactions.*

Goal 3: Industry Classification Repository

A repository and services that support the needs of industry classification (labeling) for multiple stakeholders. It must allow the classification hierarchy (graph) to be updated and be flexible so that an entity can have multiple classifications.
Current coding schemes (GICS, SIC, NAICS, ICB, ISIC, TRBC) are monolithic (single code per organization), outdated and hard to update.

- *Classification ontology that can be updated.*
- *Complex classification, e.g., ride sharing spans transportation and tech?*
- *Disaggregate large entities and allow them to have multiple classifications.*
- *Links to other economic repositories, e.g., FRED, so that they can be easily used for forecasting, etc.*
- *Link to Key Performance Indicators (KPI).*