Michel Biezunski

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Infoloom, Inc.

WHO I AM

- Michel Biezunski
- Co-inventor of Topic Maps (ISO/IEC 13250)
- Infoloom provides mapping services in various environments (government, publishing, academia)
- From XML expert, I became involved in backend/frontend development to help customers adjust to changing environments.

A RECURRING PATTERN

- Brand New Information System.
  Well designed, well structured, well organized.
- After a while, information doesn’t fit any more
- The current system would be too complex to upgrade.
  Rather, companies start from scratch.

WHY?

- Several causes, including:
  - Data structures are too rigid.
  - Automatic processes are not 100% accurate.

ADDRESSING THE CHALLENGES

- Make information fit human needs rather than computer needs.
- Graph Data Structures
- Combining Manual Curation with Automatic Processes...

LEARNING CURVE

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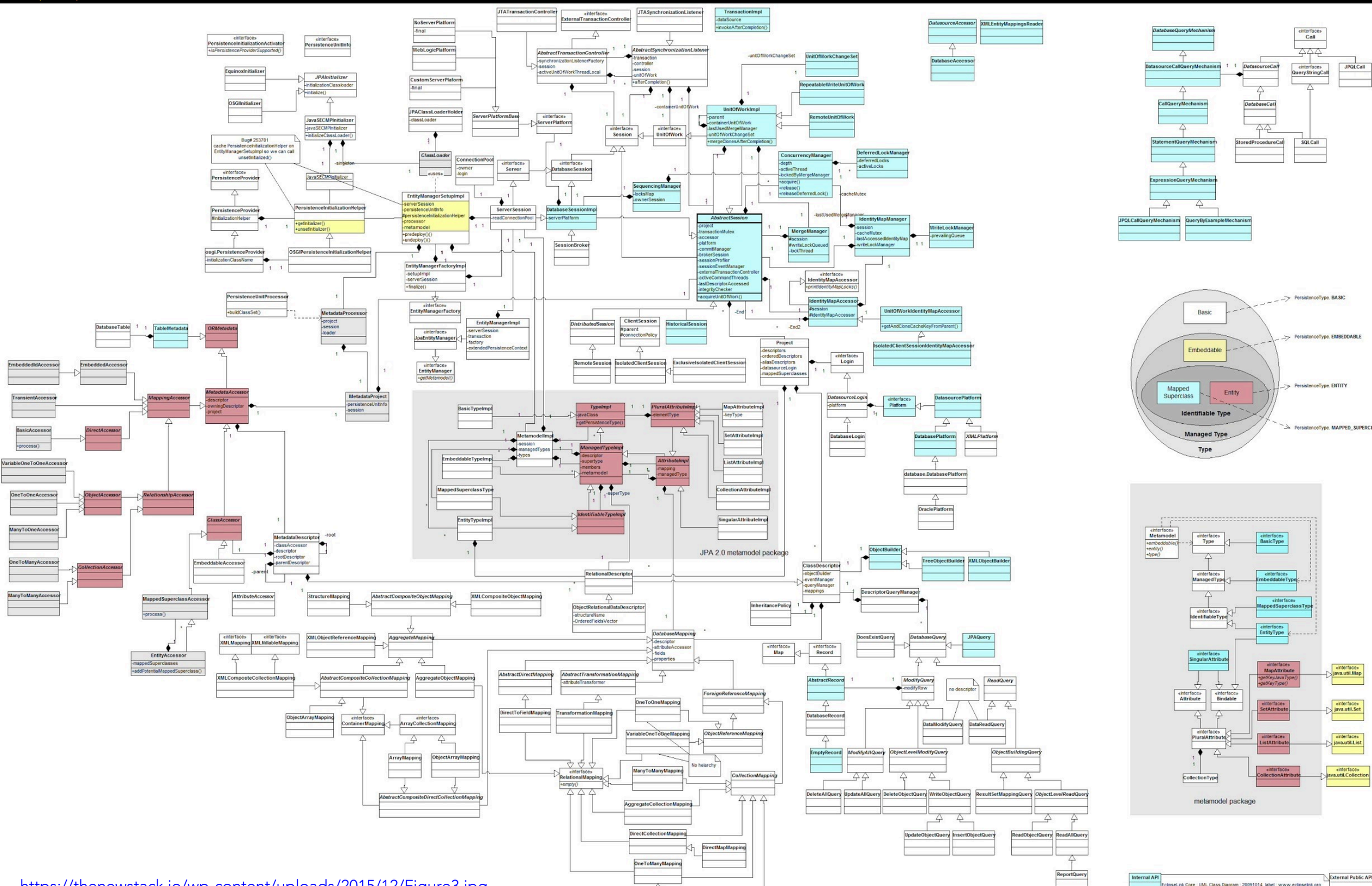
DATABASE/XML SCHEMAS



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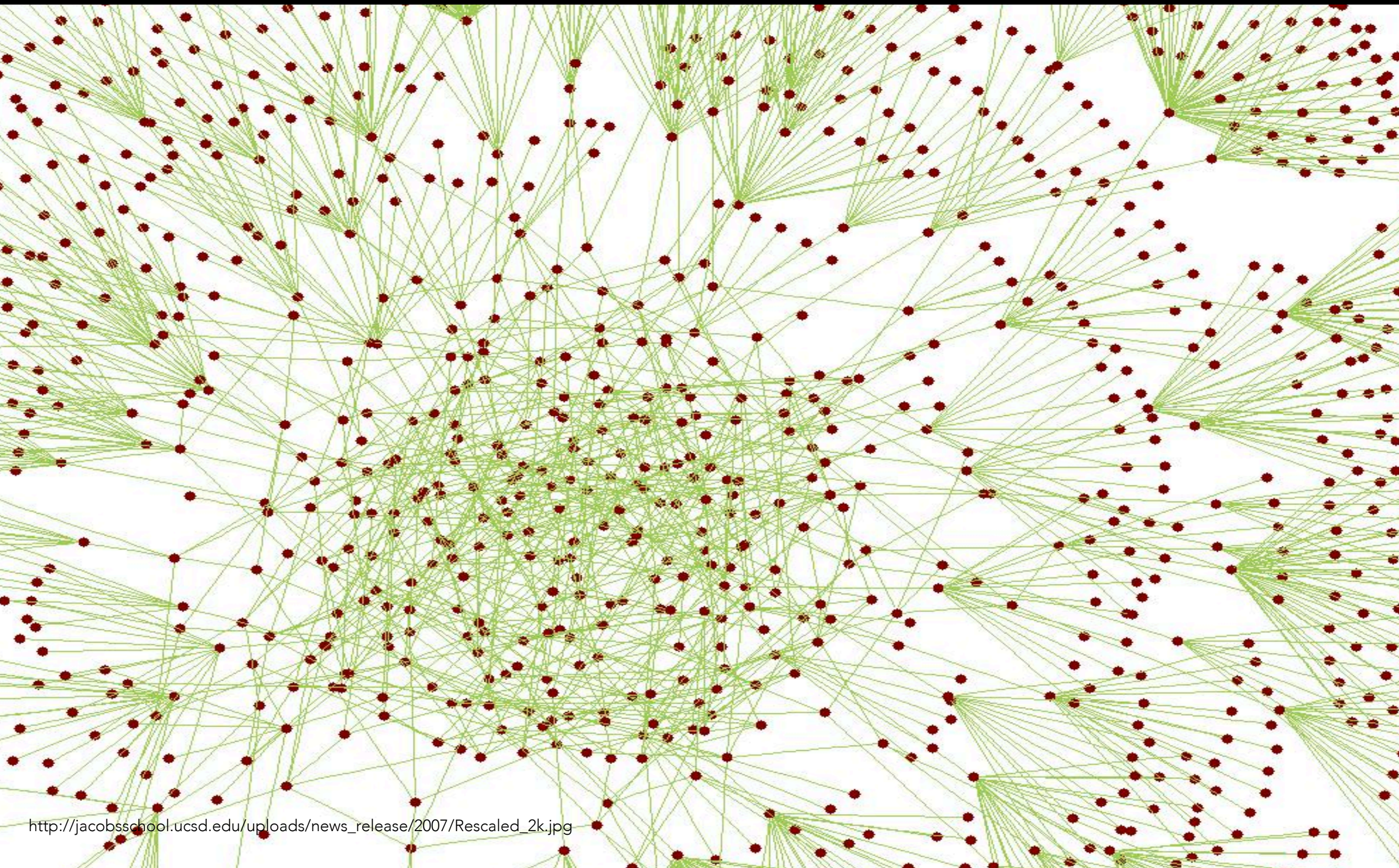
GRAPHS



http://jacobsschool.ucsd.edu/uploads/news_release/2007/Rescaled_2k.jpg

DATABASE

	A	B	C	D
1	**Title**	**Author**	**Publisher**	
2	Wishful Thinking	Jim Dulani	GiGi	
3	Just Mercy	Bryan Stevenson	Spiegel & Grau	
4	Where the Crawdads Sing	Delia Owens	G.P. Putnam's Sons	
5	All the Light We Cannot See	Anthony Doerr	Scribner	
6	Send Down the Rain	Charles Martin	HarperCollins	
7	Then She Was Gone	Lisa Jewell	Atria Books	
8	Educated	Tara Westover	Random House	
9	We Were the Lucky Ones	Georgia Hunter	Penguin Group	
10	Ordinary Grace	William Kent Krueger	Simon and Schuster	
11	All the Ugly and Wonderful	Bryn Greenwood	A Thomas Dunne Book for St. Martin'	
12	The Shell Seekers	Rosamunde Pilcher	Macmillan	
13	Lilac Girls	Martha Hall Kelly	Ballantine Books	

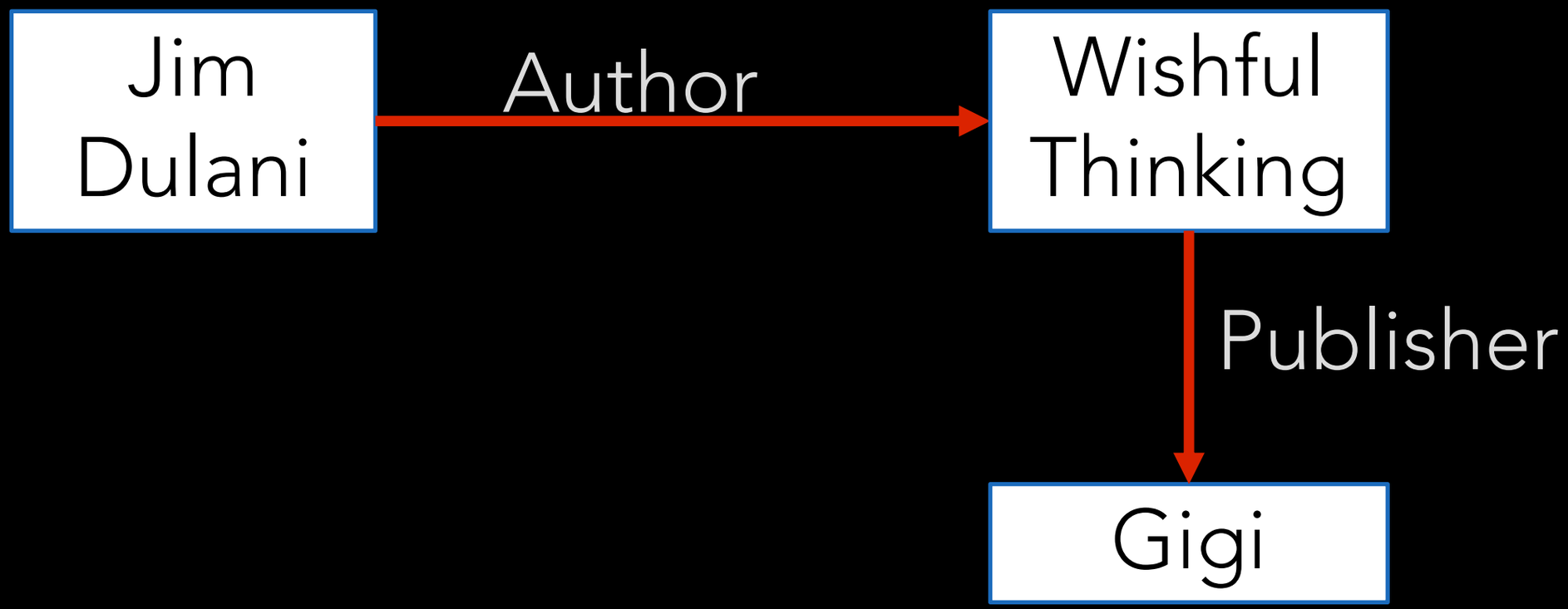
ACTUALLY, THE STORY IS…

Title	Author	Publisher
Wishful Thinking	Jim Dulani	GiGi

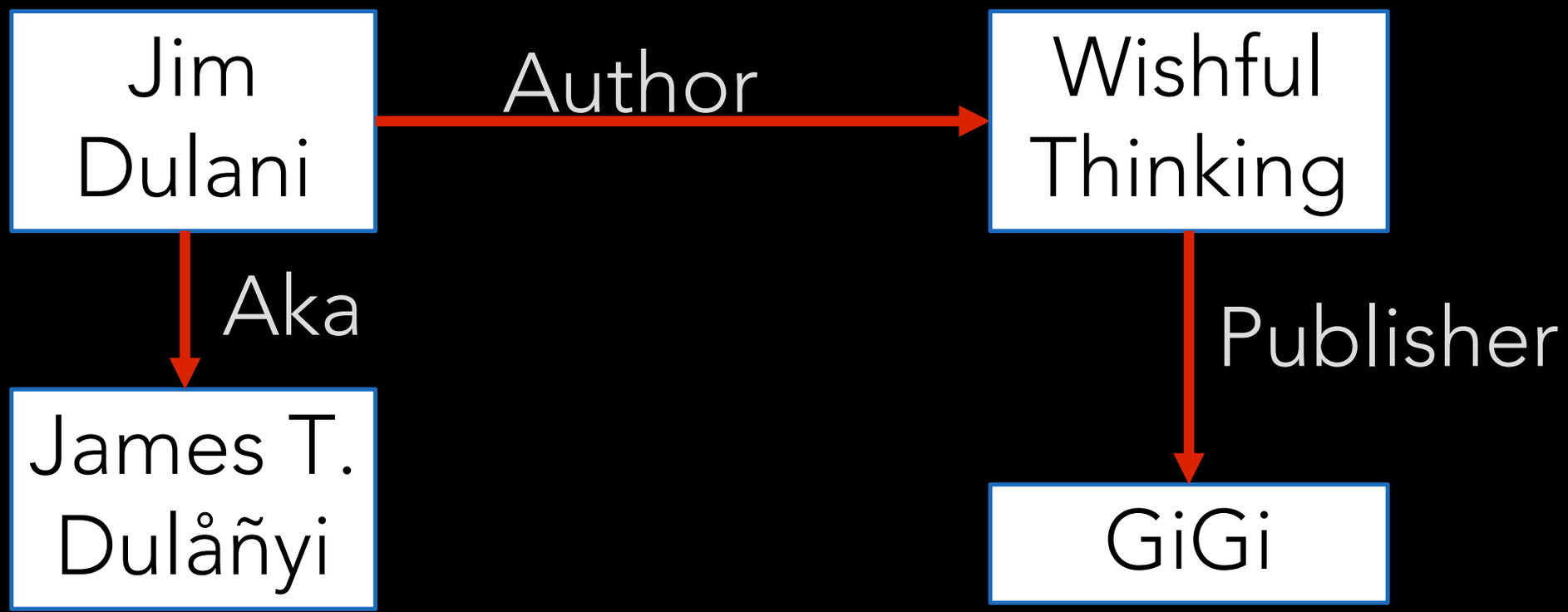
- The real name is James T. Dulåñyi, but it was easier to simplify the spelling.
- The publisher is just a web site for self-publishing. They don’t register an ISBN number.
- A movie production company is looking for purchasing the rights to adapt the book but they can’t find it.
- They are trying to get in contact with the author, but don’t find him eithe

GRAPH

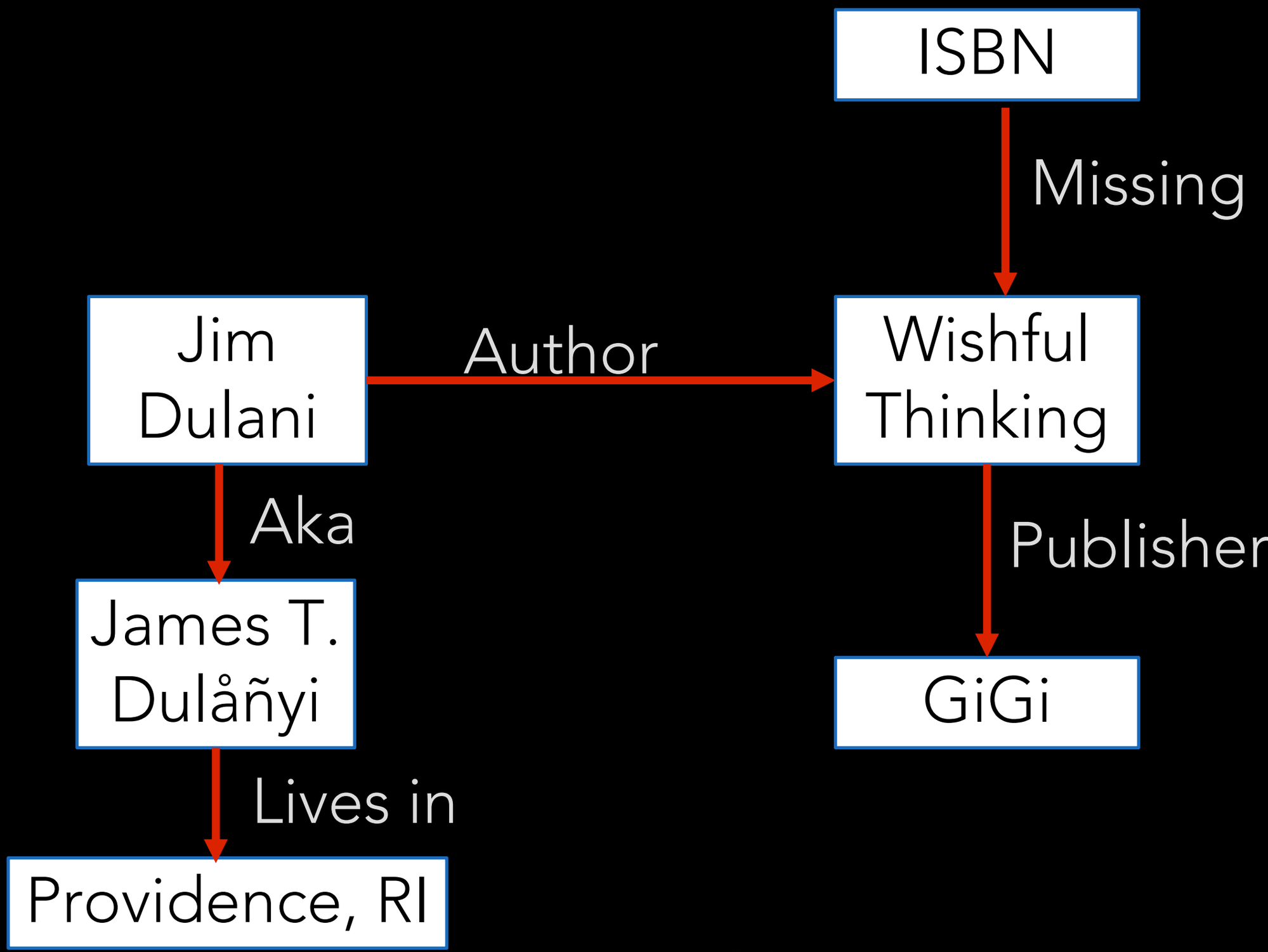
Title	Author	Publisher
Wishful Thinking	Jim Dulani	GiGi



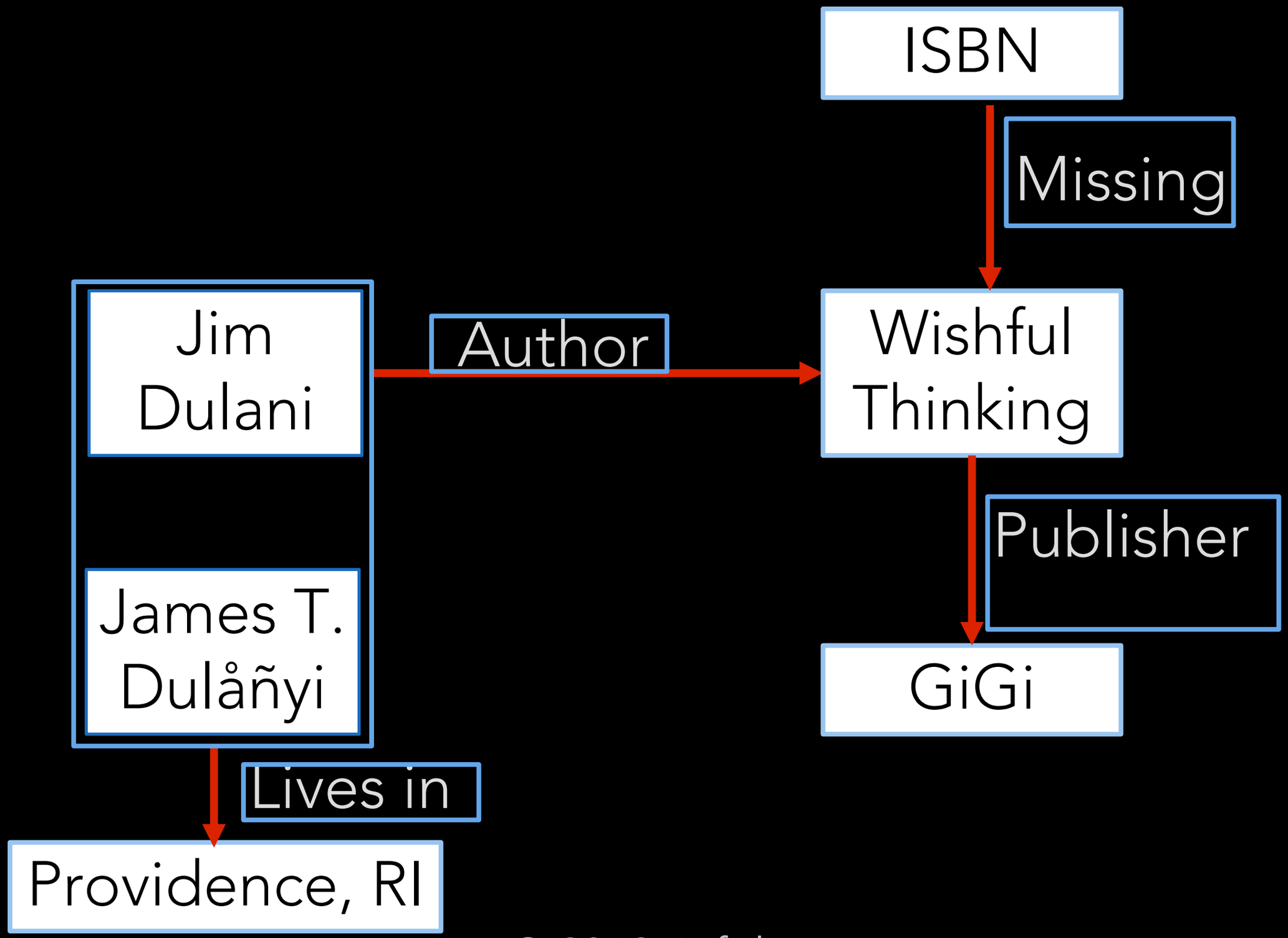
GRAPH MODIFIED



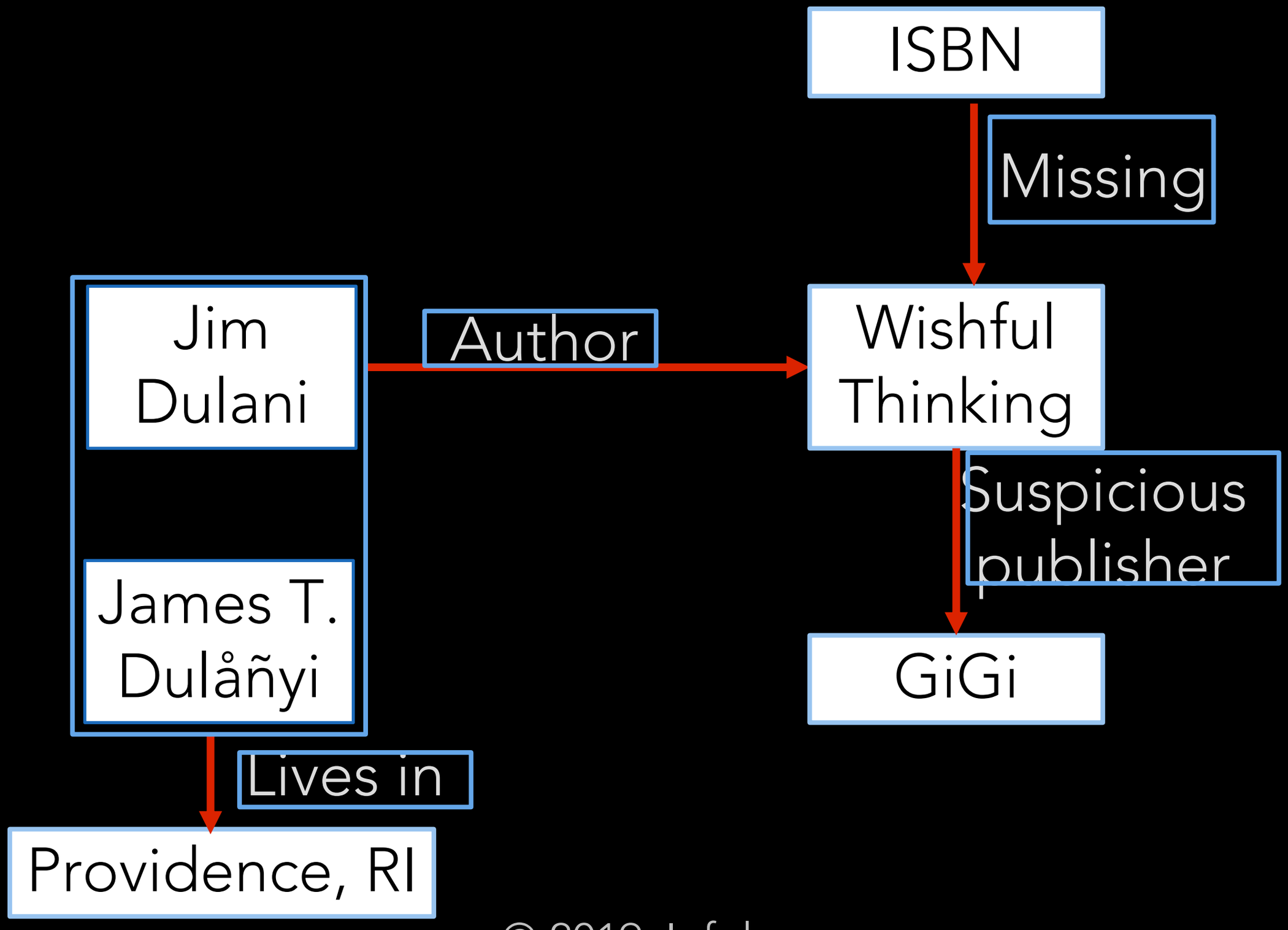
GRAPH MODIFIED, MORE



TOPIC MAP VIEW



VALIDATING PROCESS



WHY SWITCH TO GRAPHS?

- Hospitable environment for multiple data repositories to co-exist
- New inference rules can be created to validate data.
- Maintainable over the long term, because a graph can have areas that are messy without breaking the rest.

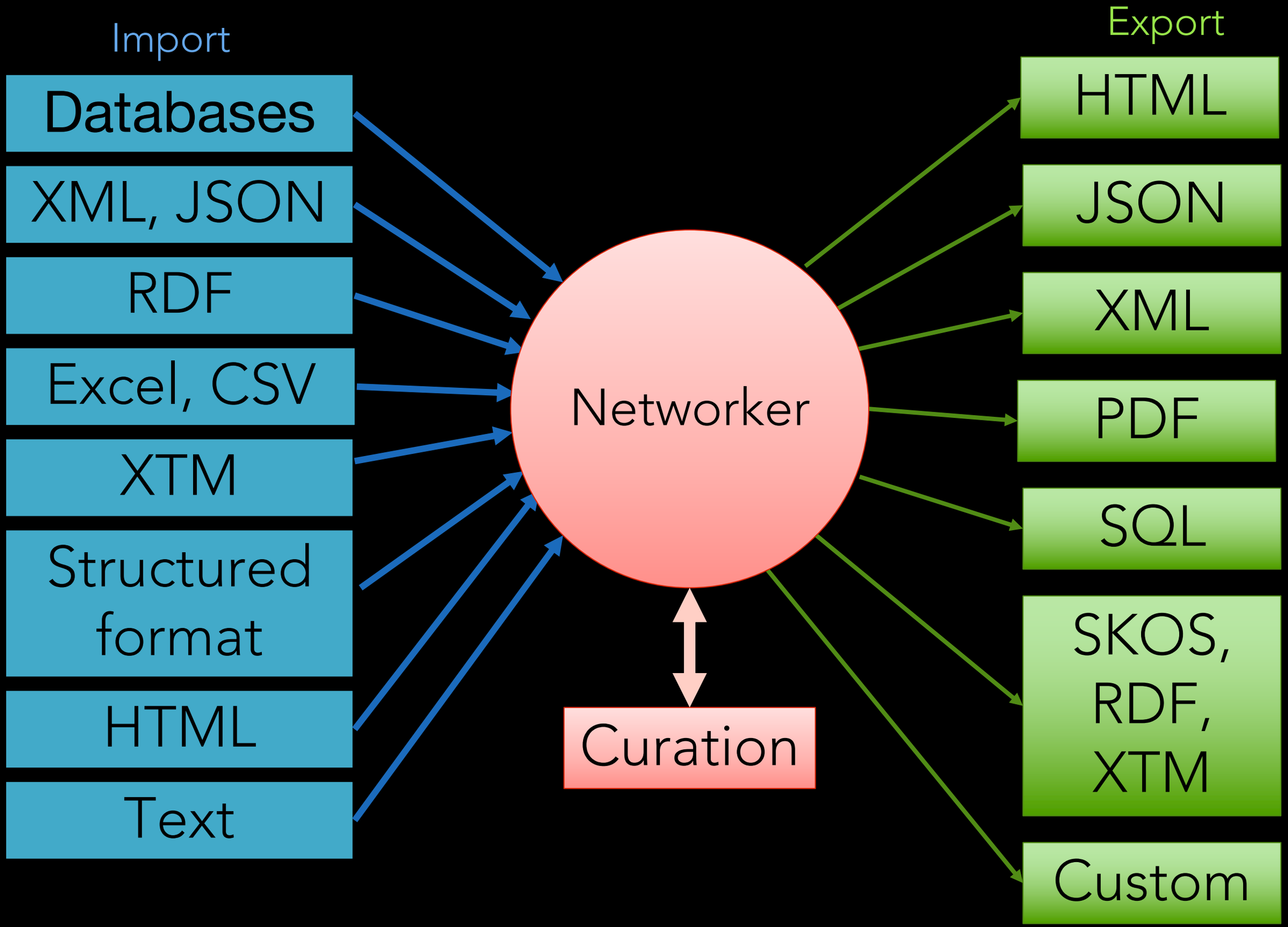
GRAPH VS. GRAPHIC

- Visually speaking, a graph structure can be purely textual.
- The Web is a graph.
- A hierarchical tree is a graph.
- A structured document is a graph.
- Relational databases are graphs.
- Bottom line: graphs can ingest legacy information, and do more.

GRAPH DATABASES

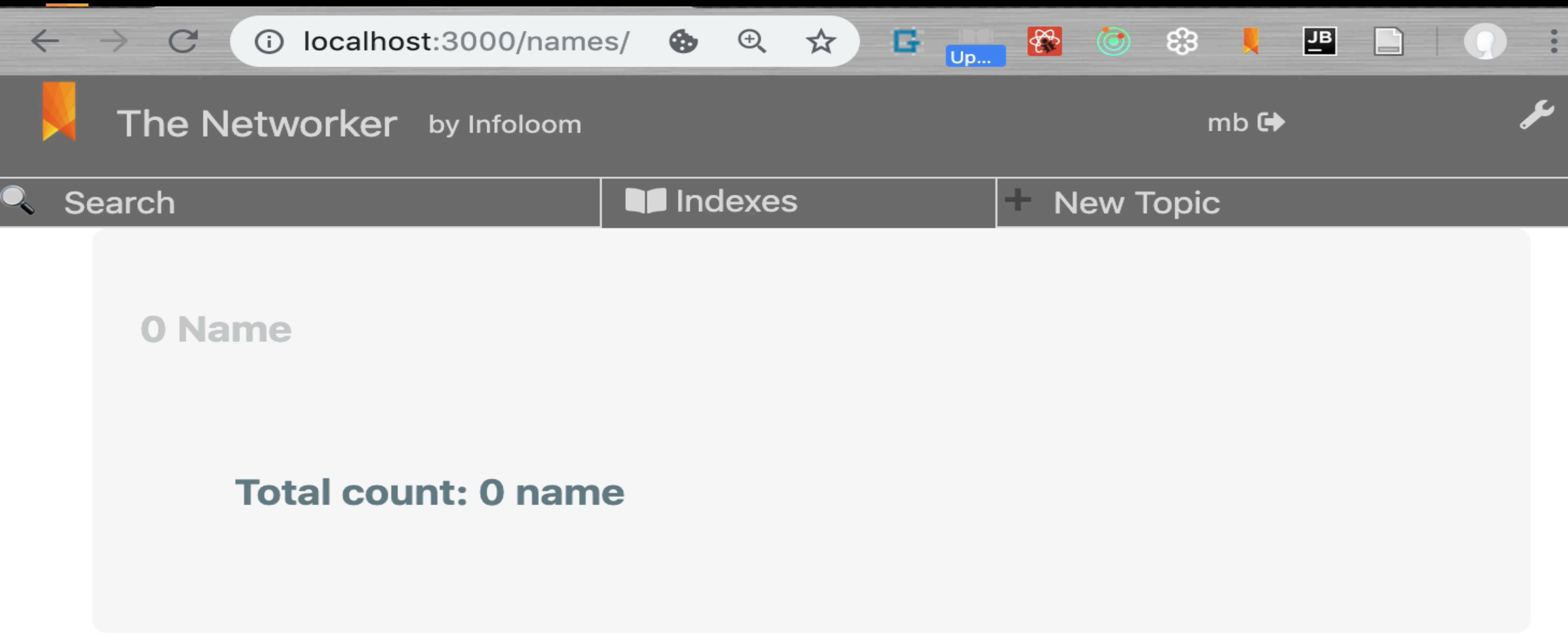
- AllegroGraph
- Amazon Neptune
- ArizoGraph
- ArangoDB
- DataStax Enterprise Graph
- InfiniteGraph
- JanusGraph
- MarkLogic
- Microsoft SQL Server 2017
- Neo4J
- OpenLink Virtuoso
- Oracle Spatial and Graph
- OrientDB
- SAP HANA
- Sparksee
- Sqrrl Enterprise
- Teradata Aster
- Topquadrant EKG

THE NETWORKER WORKFLOW



HUMAN CURATION

- For computers, mess is a bug.
- For humans, mess is a feature.

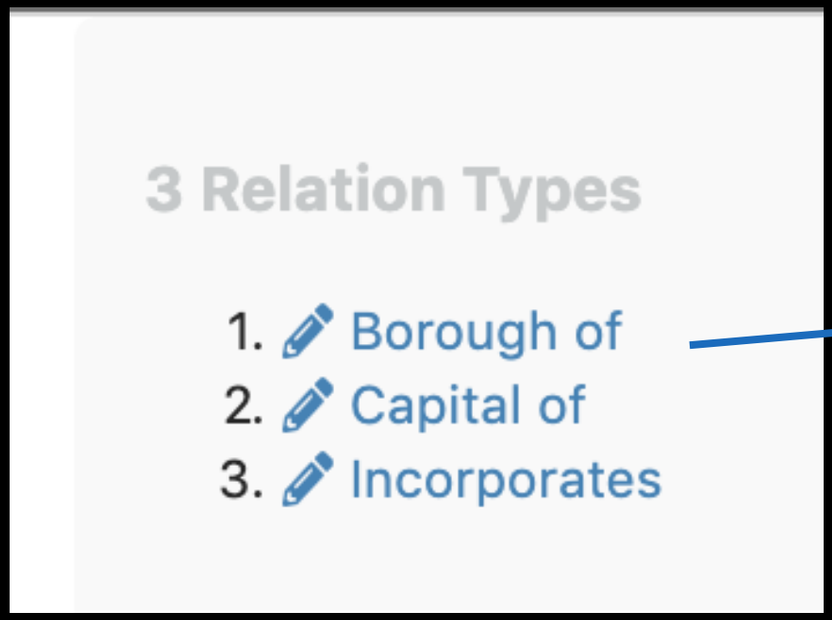


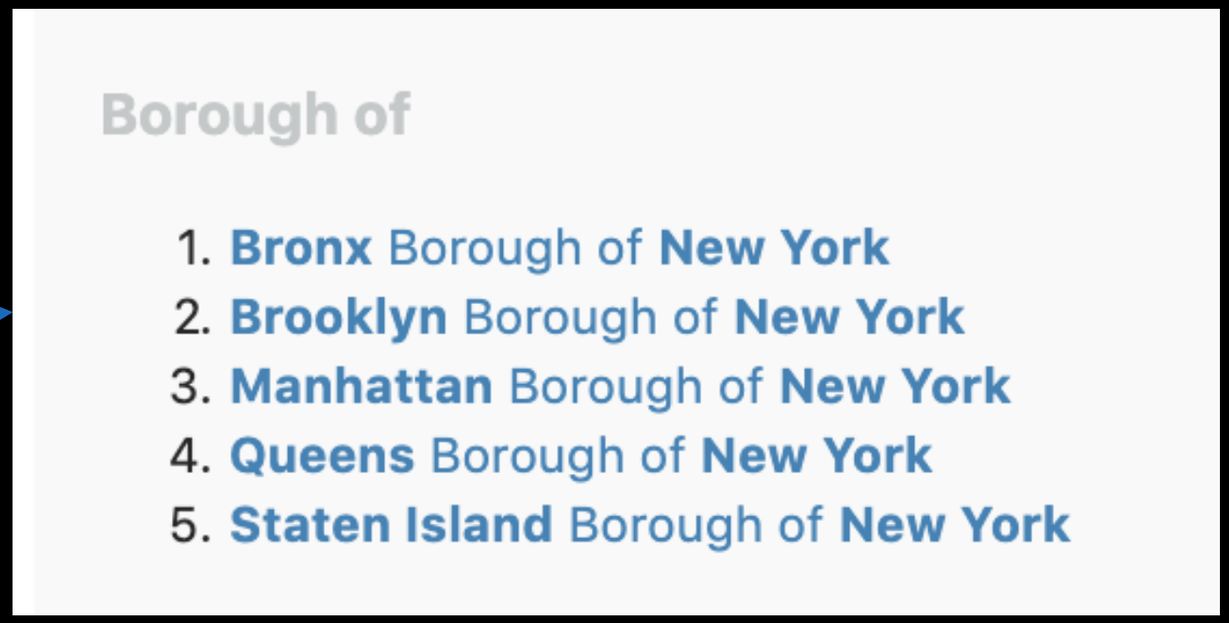
DEMO: See https://www.infoloom.com
for a live demo.

METADATA IS DATA

- Metadata comes from querying semantics of relationships.
- No need for strict information typing.
- Visualization optimized for humans, not for computers.

NO DATA TYPE NEEDED





DIVISION OF LABOR

- **IT experts** create custom…
  - scripts for import and export, based not only on formats, but on semantics
  - combined queries and validation rules.
  - export using filters based on various criteria.
  - scripts for cleaning data based on specific patterns.
- **Subject Matter Experts** fix the content.

UX

- SMEs use a friendly interface.
- IT experts easily create scripts using the API in a straightforward programming language (Python).

SO, MOVING TO A NEW HOME WHEN IT GETS MESSY?

- Mess doesn’t go away just because things are swept under the rug.
- Cleaning becomes necessary when things go out of control.
- Priorities can be set to select areas that need to be cleaned urgently.
- Once you’re done cleaning, consider you may have to clean again later.
- Cleaning tools exist.

Questions ?

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http://vesofcorsa.com/wp-content/uploads/2017/05/Brooms-Wallpaper-1024x768.jpg