



2010 Semantic Technology Conference

JUNE 21 - 25 SAN FRANCISCO, CA

What Will We Be Saying About Semantics This Year?

Dave McComb

Semantic Arts

June 21, 2010

San Francisco, CA

As Philosopher, Pundit and American League Catcher Yogi Berra once said,



“It’s tough to make predictions, especially about the future.”

Presumptuous of me

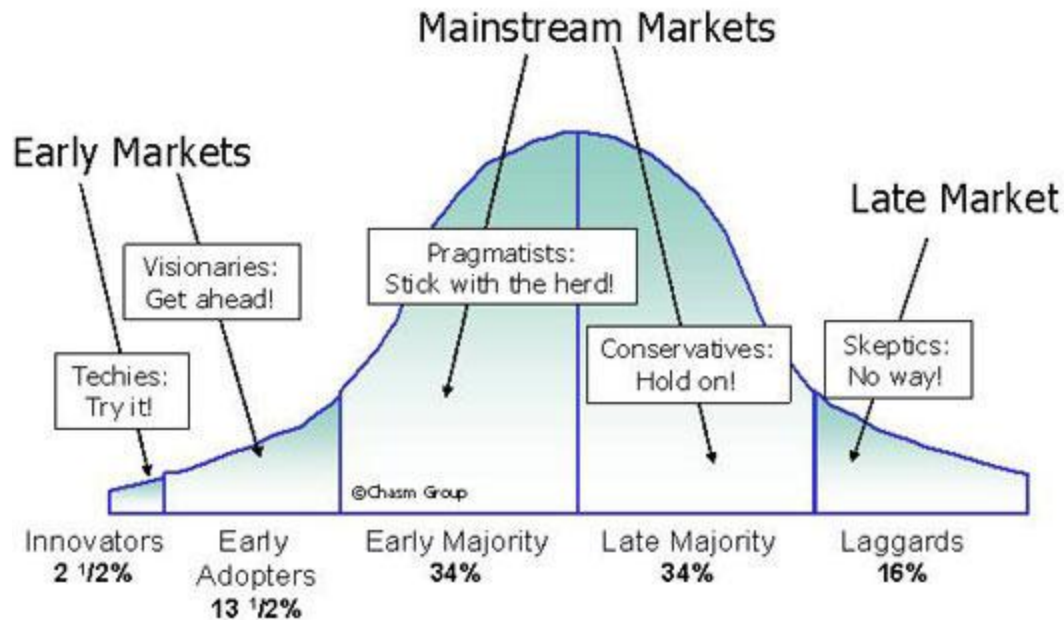
- To try to guess what we'll be talking about this year...



Adoption Where Are We?

Technology Adoption Life Cycle

Groups are distinguished from each other based on their characteristic response to discontinuous innovations created by new technology

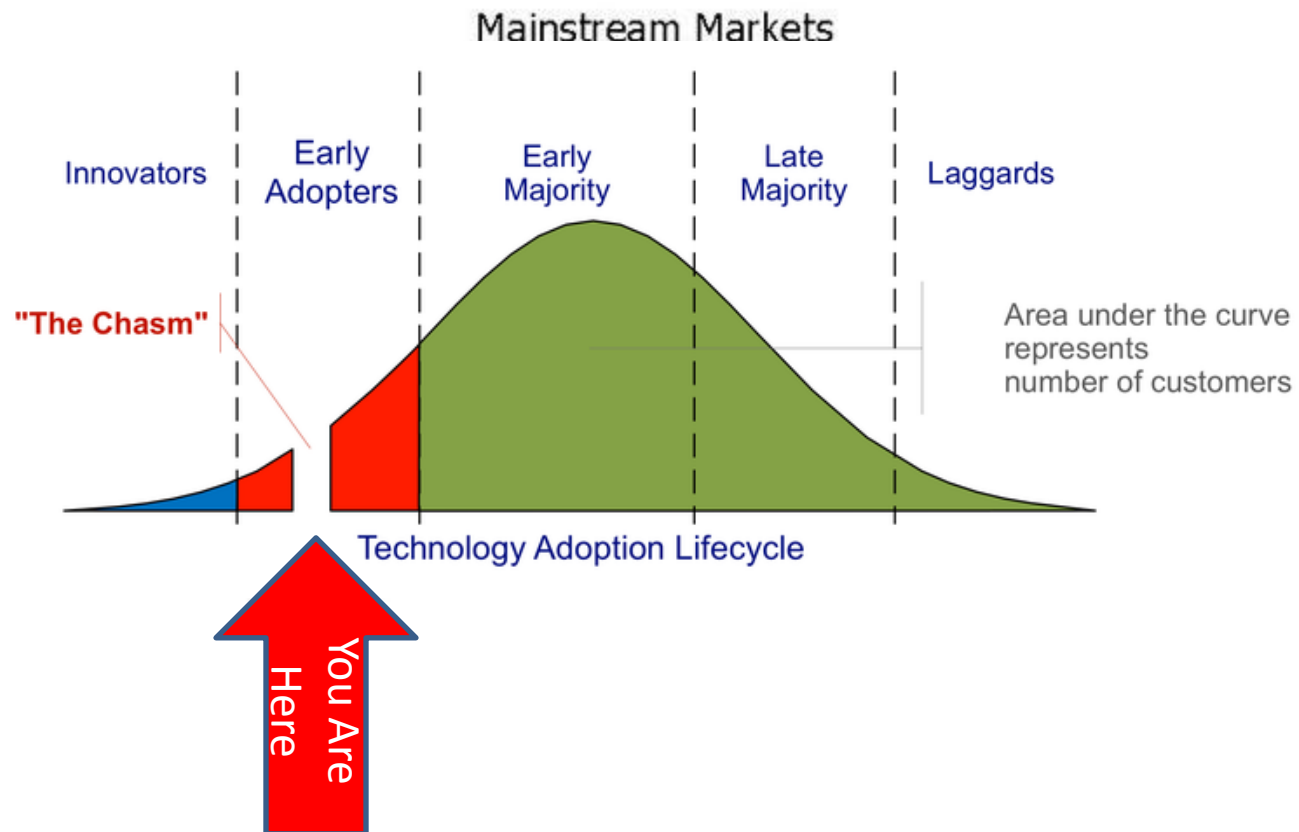


Where are we?



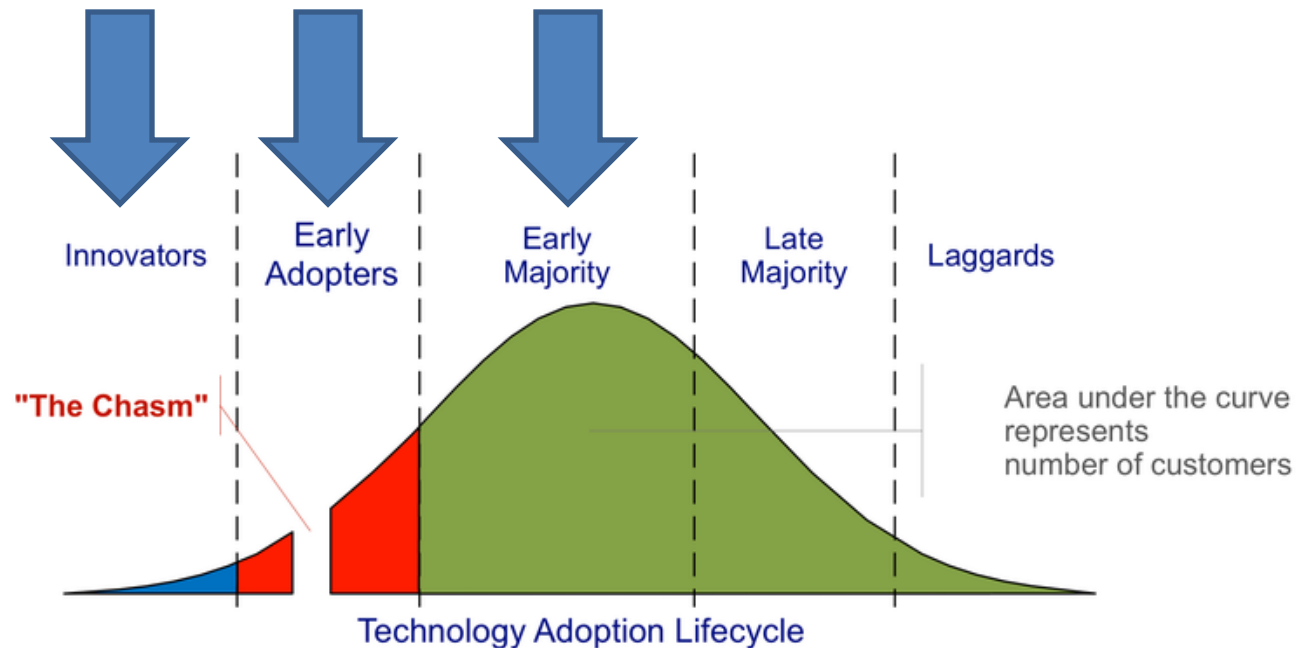
Technology Adoption Life Cycle

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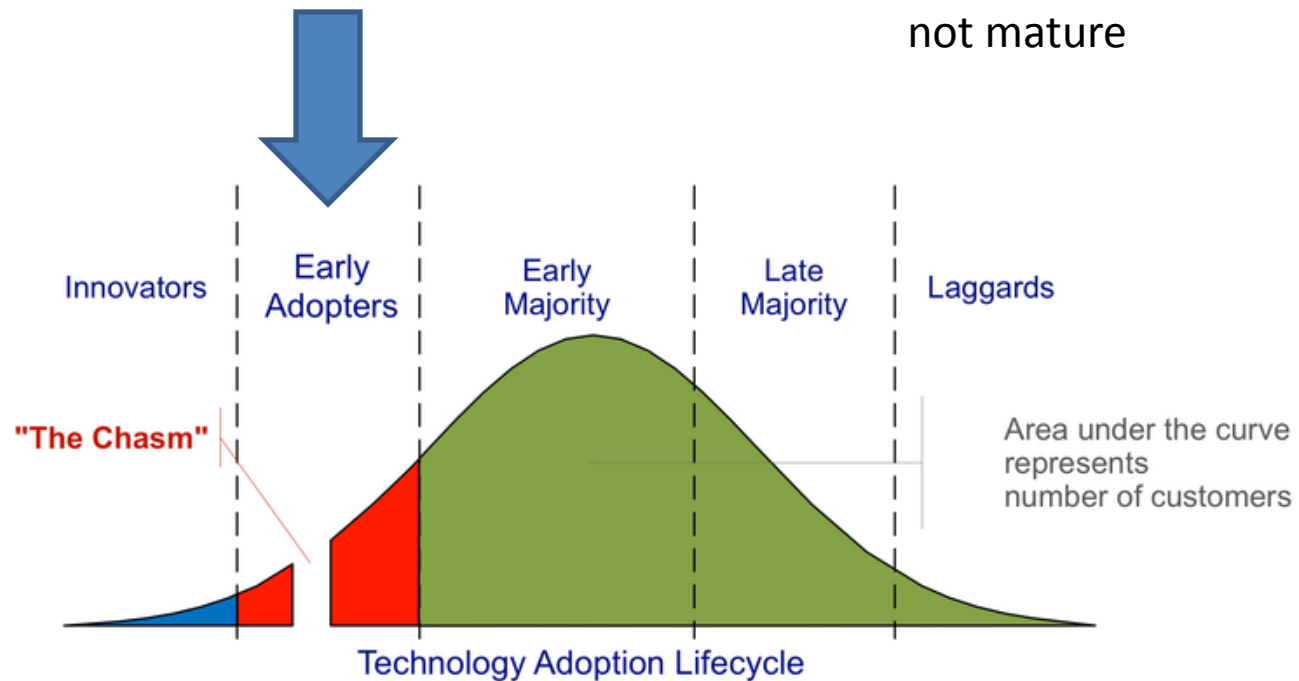
Here's where the problem lies

The innovators and early adopters are mostly interested in building this stuff.
The early majority are "pragmatics".



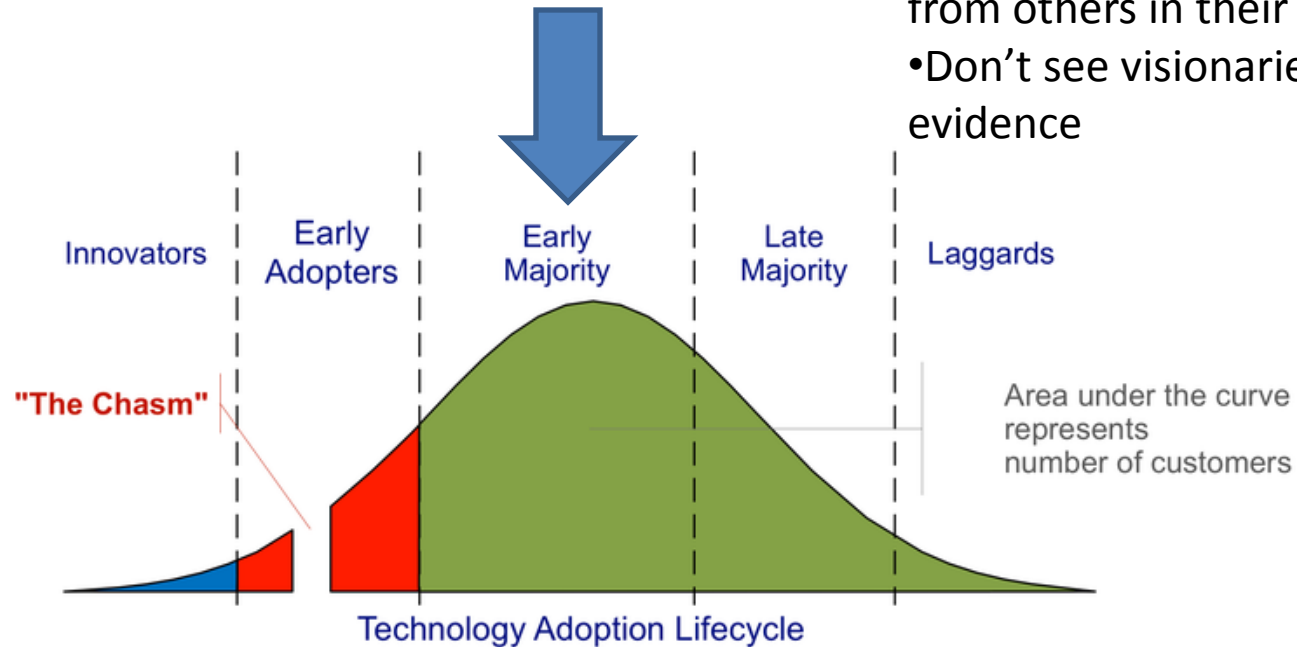
Visionaries

- See an opportunity
- Don't mind, in fact prefer, the fact that technology is not mature

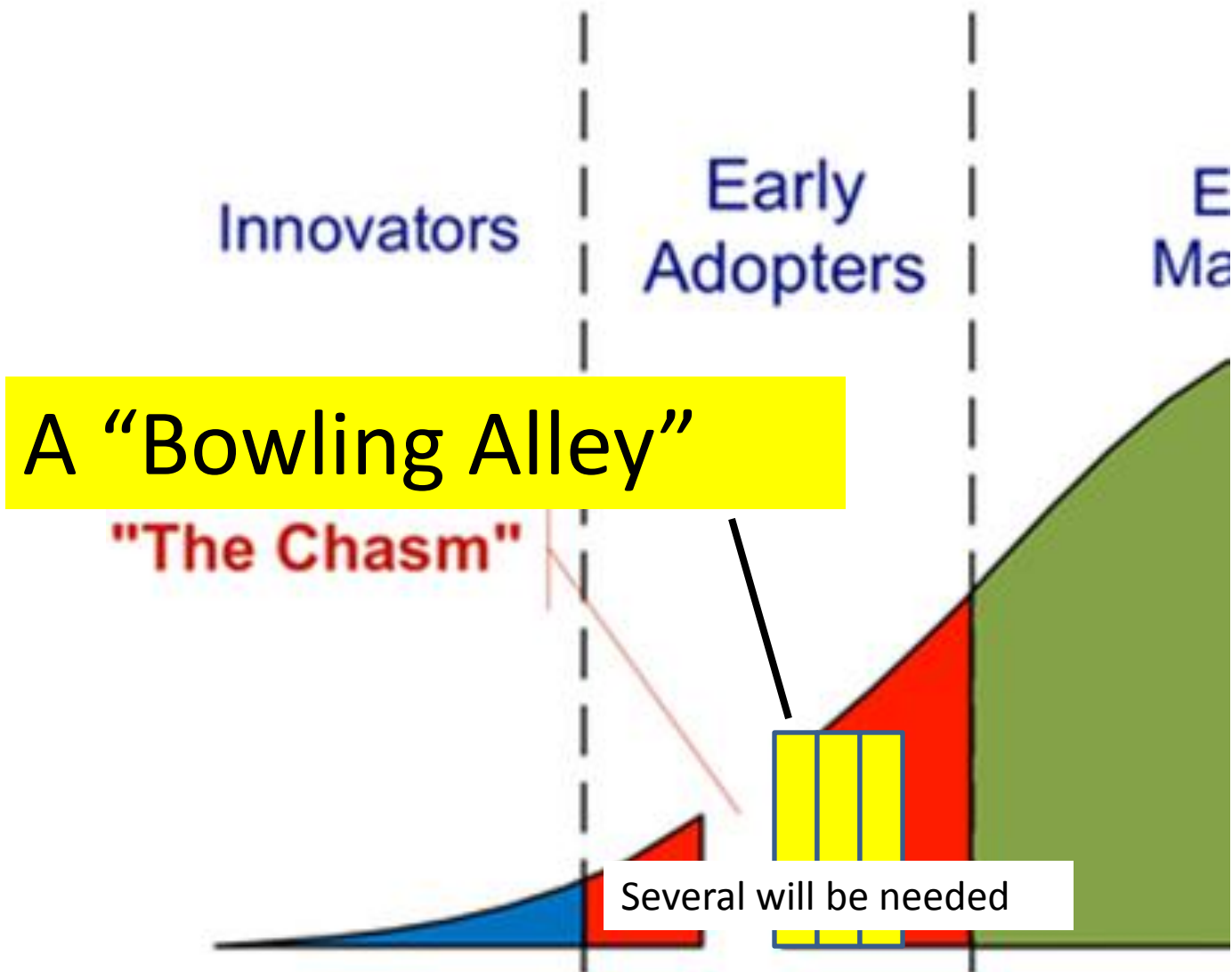


Pragmatics

- Want the product mature and want to buy from market leader
- Get their buying signals from others in their vertical
- Don't see visionaries as evidence



“Bowling Alleys”



“Bowling Alleys”

- To execute the bowling alley strategy you need to become a “whole solution” for a narrow niche market segment
- Specialize, and complete the offering

Don't Need to Be the First Mover

- Need to be the best
- Stay in a niche until you own it, then another
- Then generalize

What are the “Semantic Bowling Alleys?”

“...in conclusion, in the future just to remain competitive all organizations will have to implement a state of the art Semantic Technology based system.”

“Ok, that’s a wrap.”

“Also, Ms. Jones, could you find out what Semantic Technology is”



For those who are new...

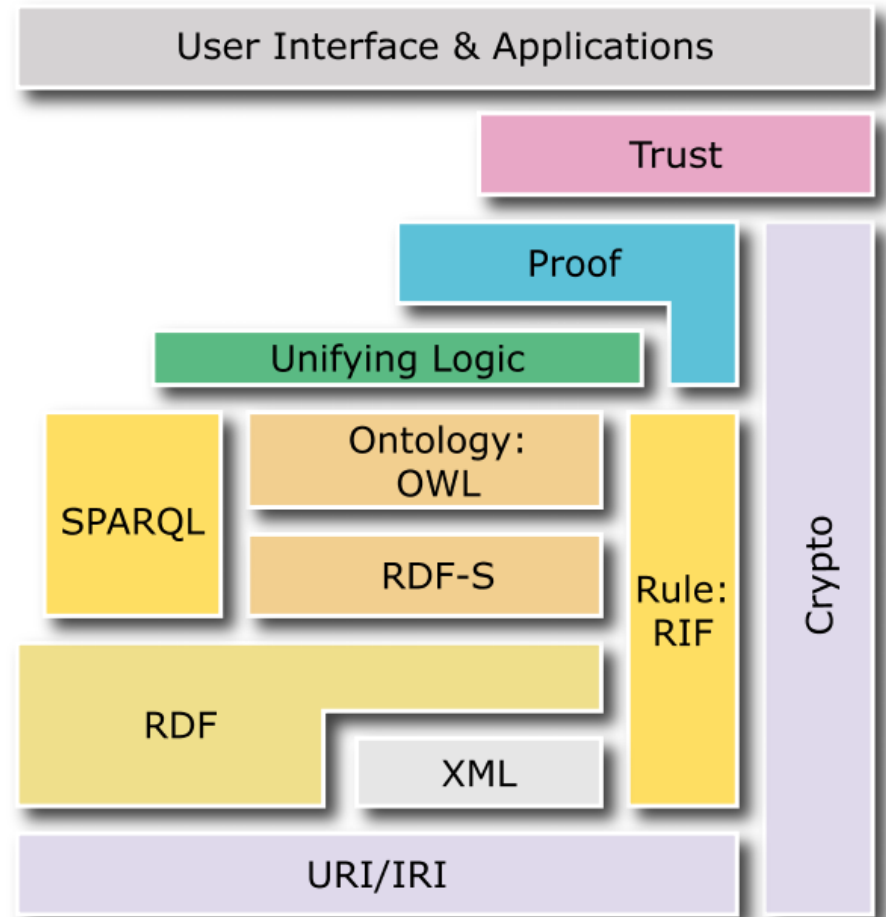
- Or for the rest of you, looking for better ways to explain this stuff to your peers...

Semantic Technology

- Is about using software to leverage our understanding and use of information

Semantic Web

- Standards for implementing semantic technology



Three things that are just a bit different

- One way to identify everything
- One way to assert facts
- Different ways to define types/sets/classes or categories

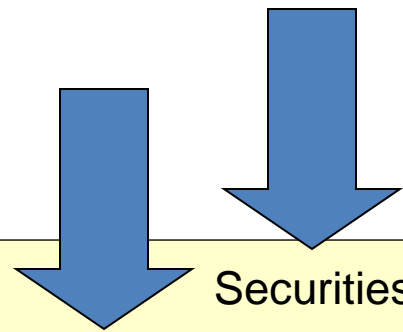
Identity – Historic Treatment

- Create a table
- Give it an “id” or “key”

Securities	
ID	Company
02209S103	Phillip Morris
761713106	Reynolds

Historic Treatment

- To get data out, you need to know the table and the column (the metadata).

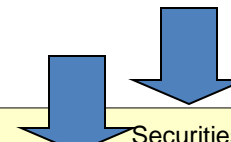


Securities	
ID	Company
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761713106	Reynolds

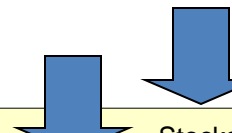


Historic Treatment

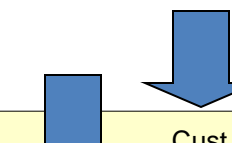
- To get data out of dozens of systems, you'd need to know dozens of bits of metadata.



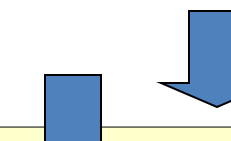
Securities	
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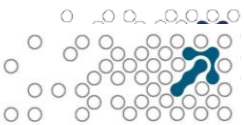
Stocks	
Key	Company
02209S103	Phillip Morris
761713106	Reynolds



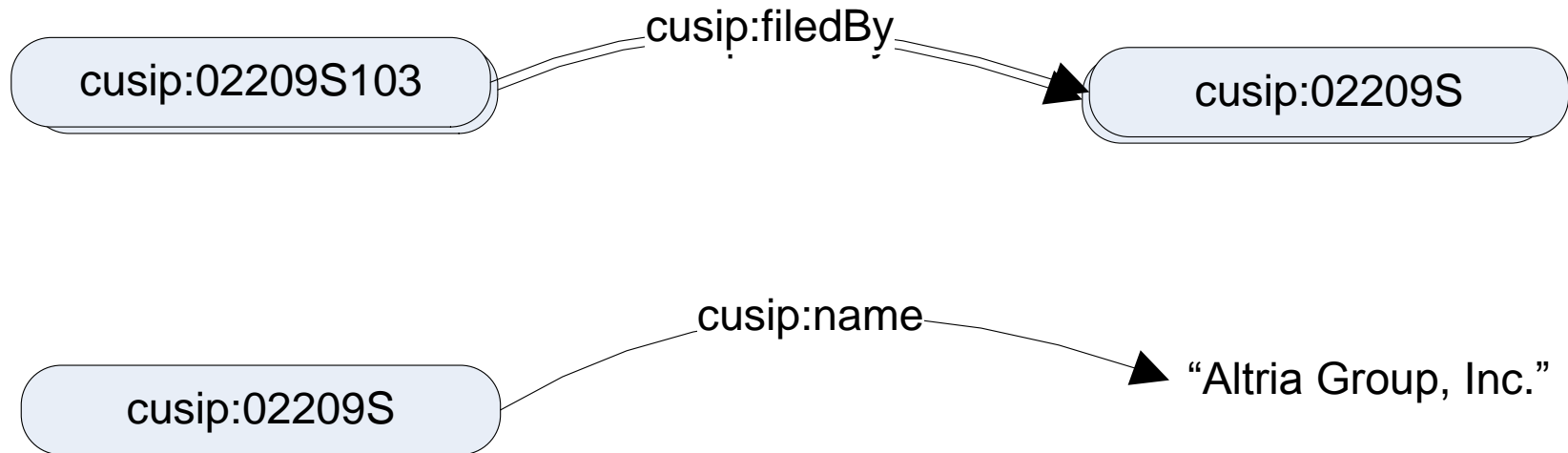
Cust	
CID	Company
02209S103	Phillip Morris
761713106	Reynolds



Companies	
Comp	Company
02209S103	Phillip Morris
761713106	Reynolds

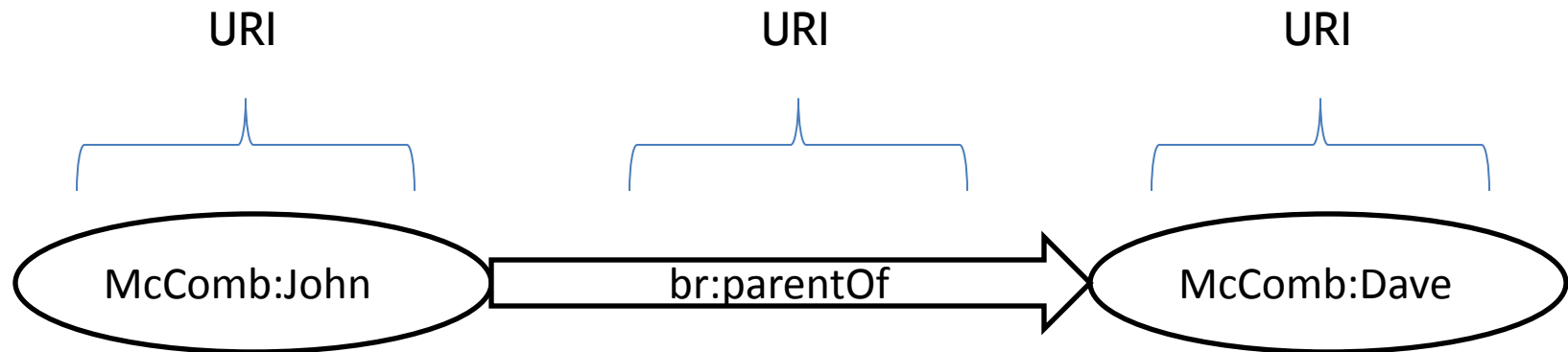


One (two) way to assert facts



Anatomy of a triple

Of a “property”

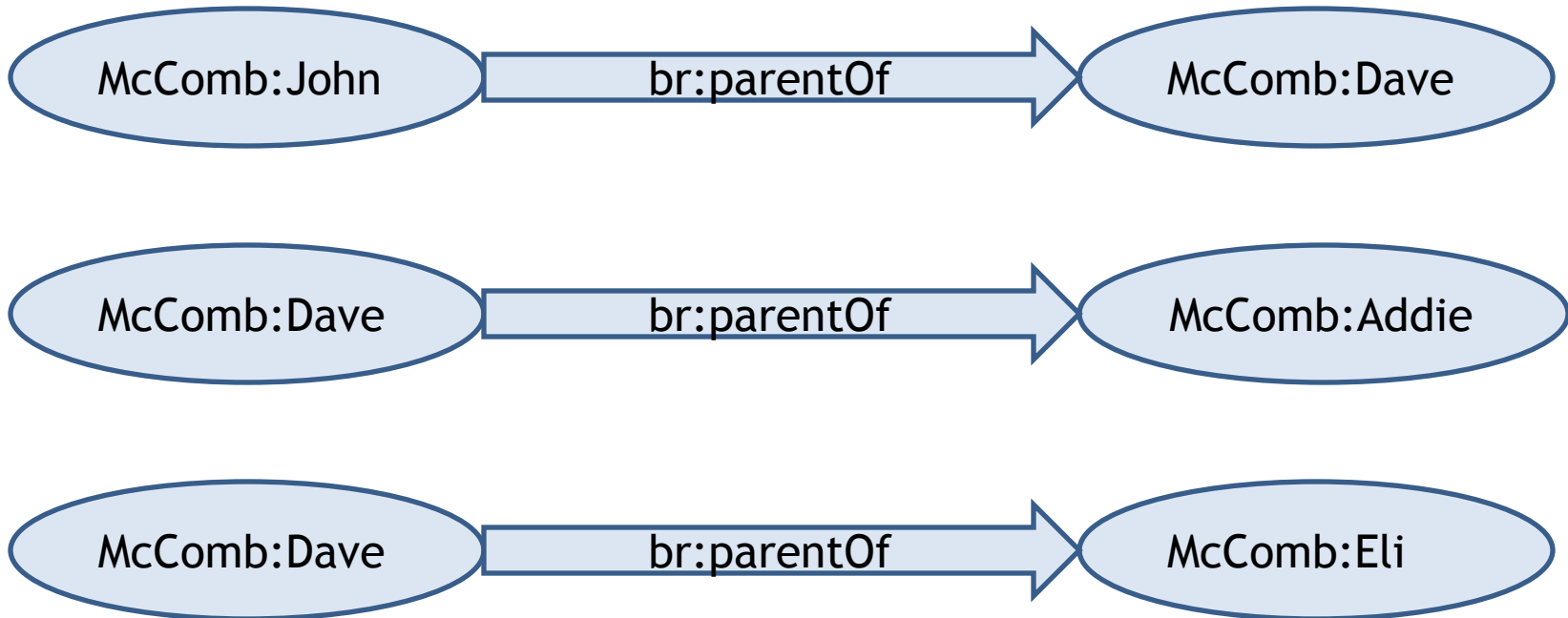


The Logical Model of the Semantic Web

Subject	Predicate	Object
URI	URI	URI
URI	URI	Literal

Triples

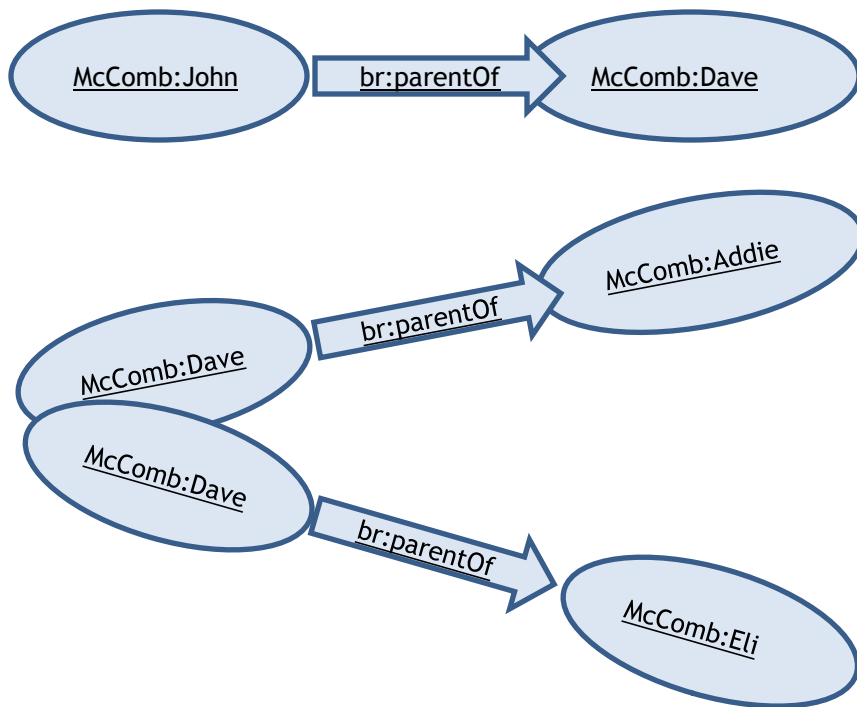
Subject	Predicate	Object
McComb:John	br:parentOf	McComb:Dave
McComb:Dave	br:parentOf	McComb:Addie
McComb:Dave	br:parentOf	McComb:Eli



Here's where the magic is....

Triples to Graphs

Linked Data



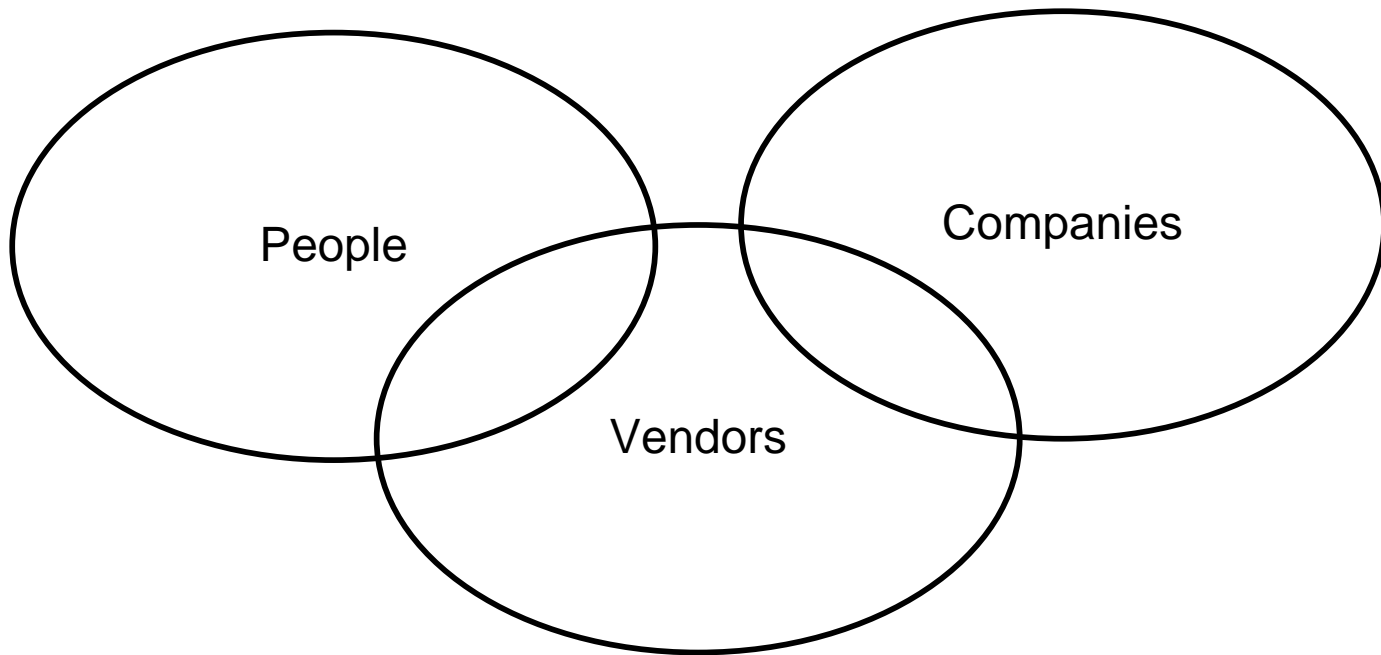
The “join” is done at the instance level

- No metadata was harmed in the making of this join.
- The metadata wasn't even interrogated.
- In fact, it just isn't necessary.

Schema

- In traditional systems, “schema” defines physical structure as well as hinting at meaning, and must be defined before data can be stored.
- In “Semantic-land” the schema is “logical” (not physical) and “late” (can be bound after the instances have been created).

Classes, Categories, Sets, Types



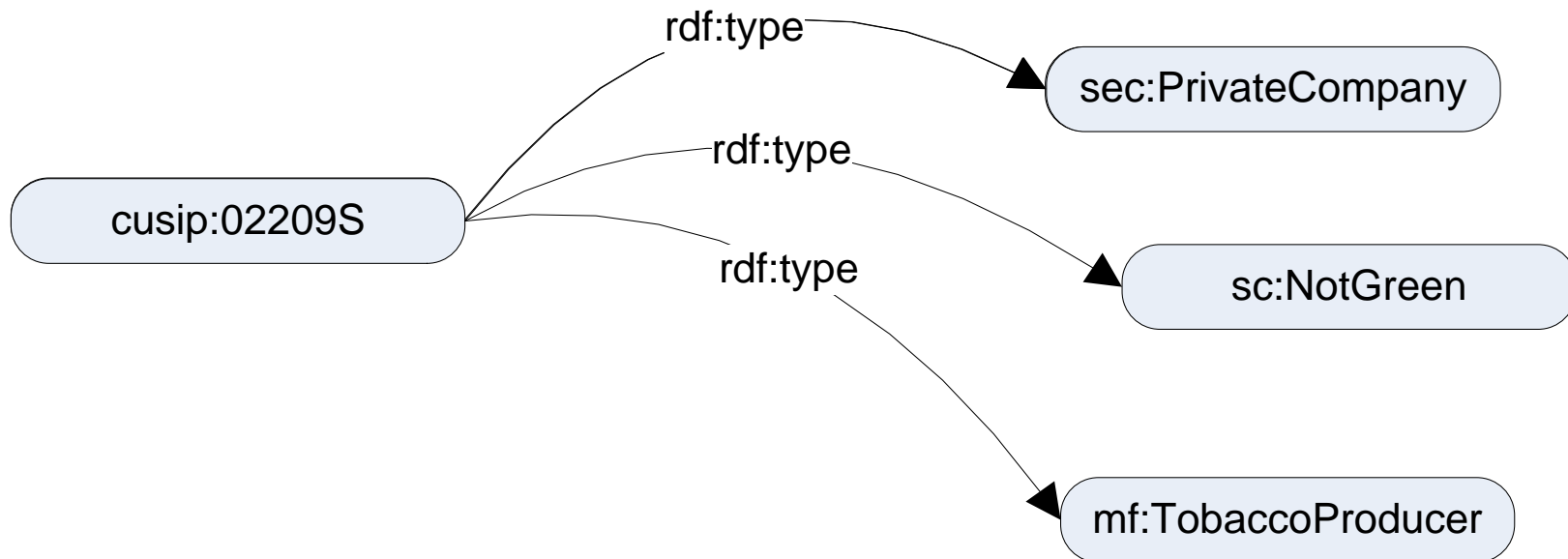
Current Approaches

- Humans assign things to categories.
- Things get one primary category and that category's parents.
- Once assigned, items stay in their categories.

Web 3.0 approach

“Type” or “Class” is not structural. It’s just another assertion.

Any instance may be many types simultaneously.



IRS definition of a passenger automobile

- A passenger automobile is a 4-wheeled vehicle manufactured primarily for use on public roads that is rated at 6,000 pounds unloaded gross vehicle weight or less. Certain vehicles, such as ambulances, hearses, and taxicabs, are not considered passenger automobiles and are not subject to the line 36 limits...

Form 4797

TopBraid - passenger.owl - Eclipse SDK

File Edit Navigate Project Inference Model Resource Window Help

PassengerVehicle

Classes

- owl:Thing
 - owl:Nothing
 - Vehicle
 - NotPassengerVehicle
 - Ambulances
 - Hearse
 - Taxicab
 - TruckOrVan
 - PassengerVehicle
 - Truck
 - Van
 - Weight
 - Wheel

*passenger.owl

Class Form

Name: PassengerVehicle

Annotations

Class Axioms

rdfs:subClassOf

- Vehicle

owl:disjointWith

- NotPassengerVehicle
- Ambulances
- Taxicab
- Hearse

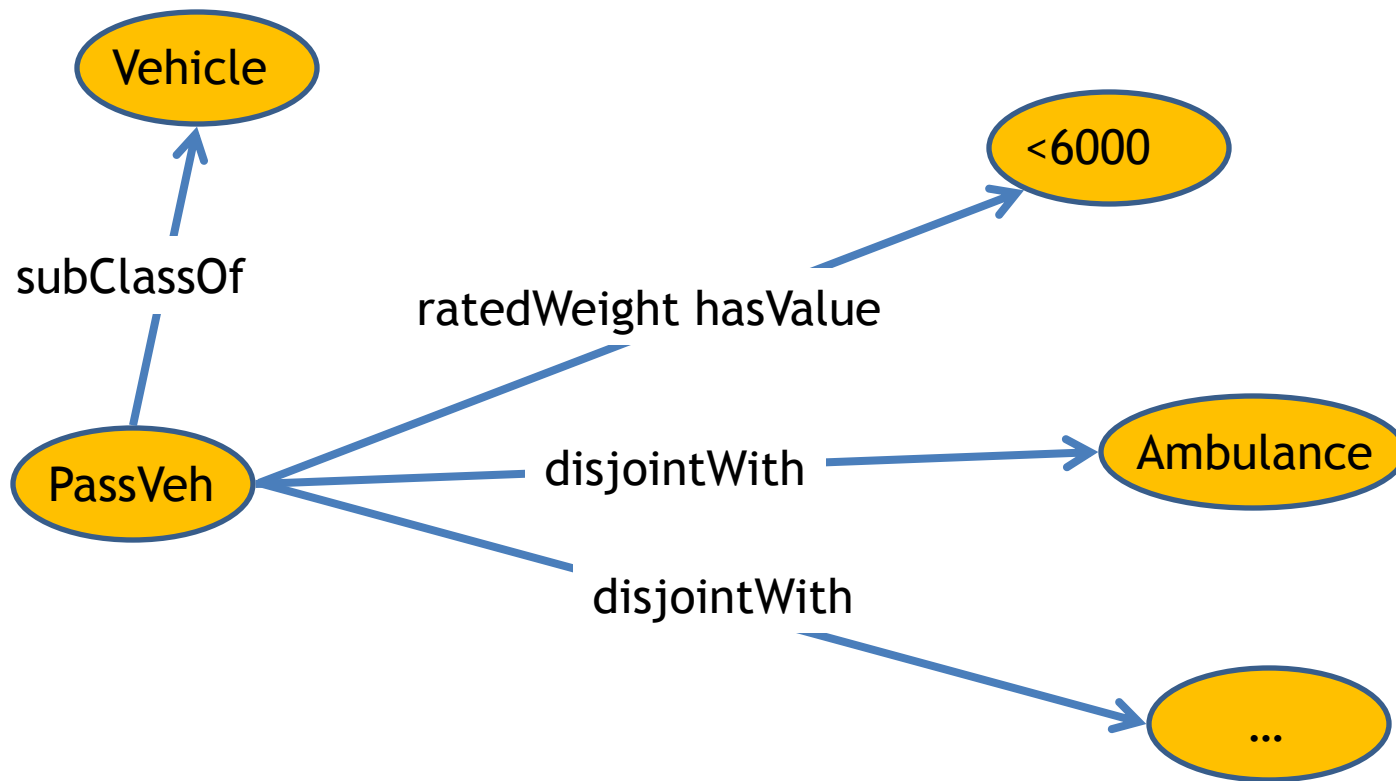
owl:equivalentClass

- hasWheel **max** 4
- ratedWeight **has** lessThan6000
- ratedWeight **some** Weight

Properties

- hasWheel
- ratedWeight
- unloadedGrossVehicleWeight
- owl:versionInfo
- rdfs:comment
- rdfs:label
- rdfs:seeAlso

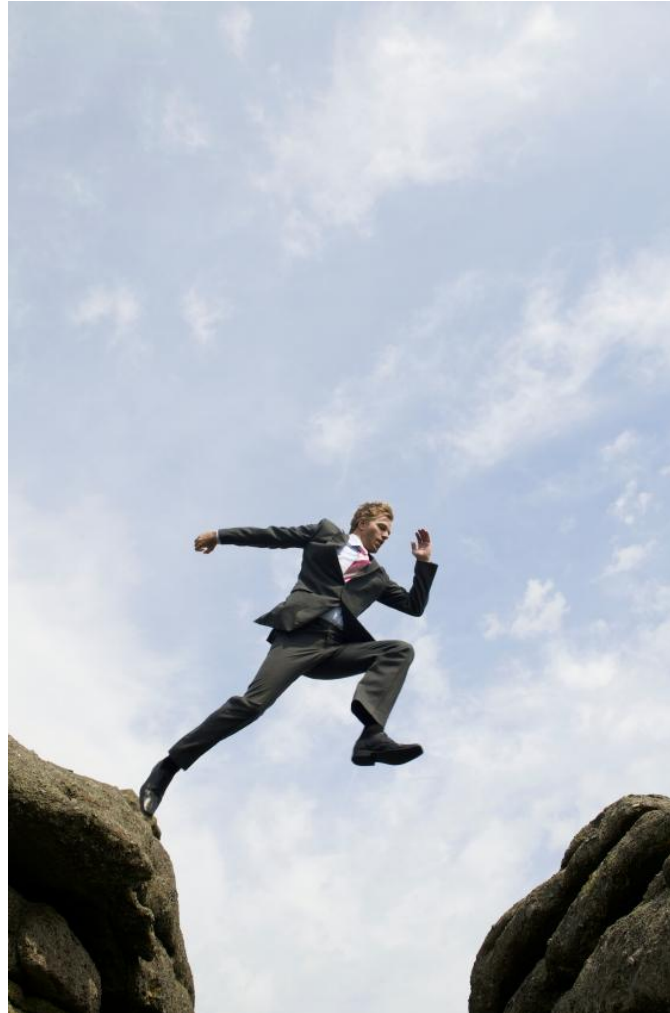
Even the definition of classes is done in triples



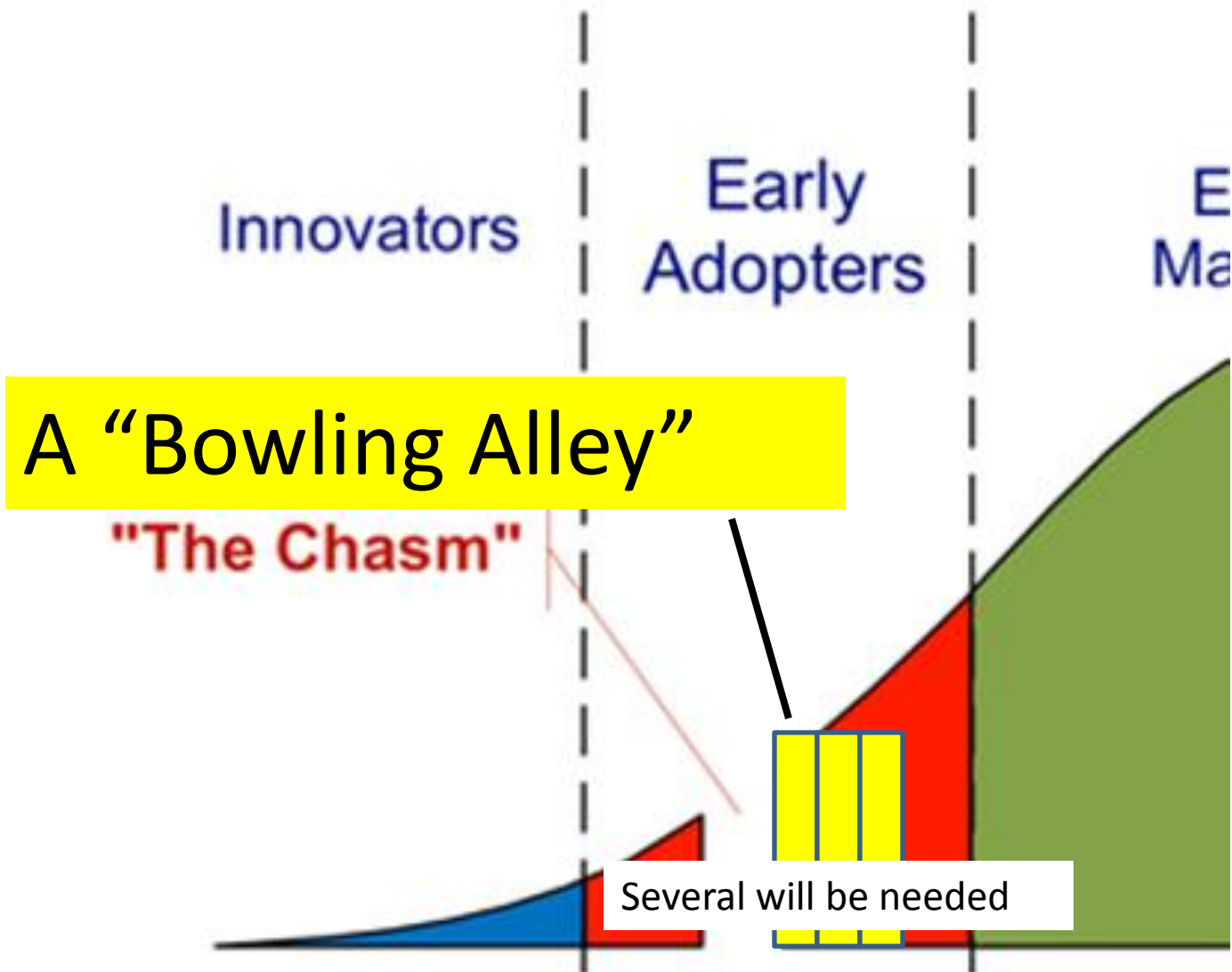
Quick recap

- One way to identify things
- One (two) ways to make assertions (with triples)
- Many ways to define and assign things to categories

Now back to the Chasm, which we were half way across



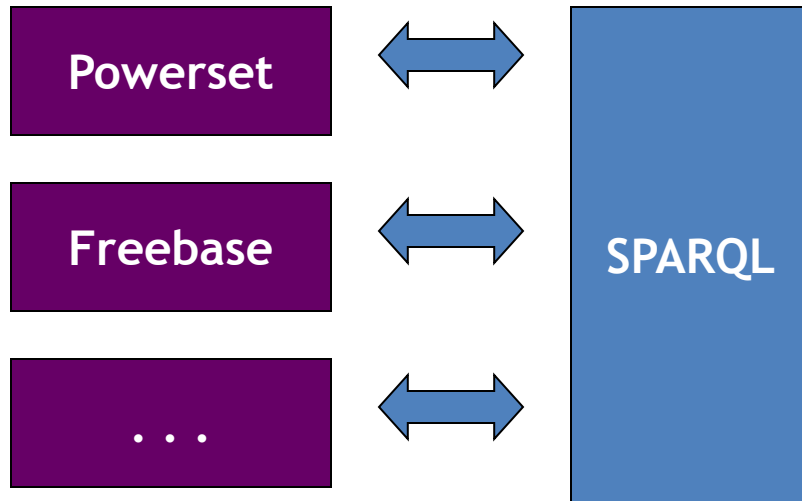
Candidate Bowling Alley Areas



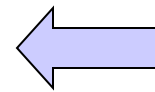
Or “What We’ll Be Talking About This Year”

Linked Open Data Cloud

SPARQL End Points



270 million triples
2 million concepts



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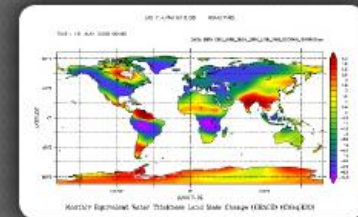
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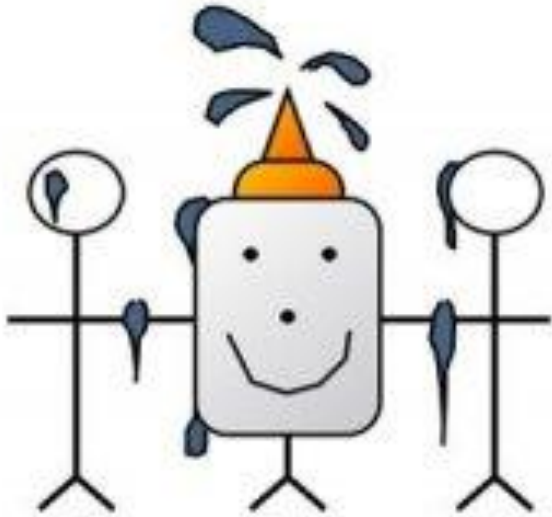
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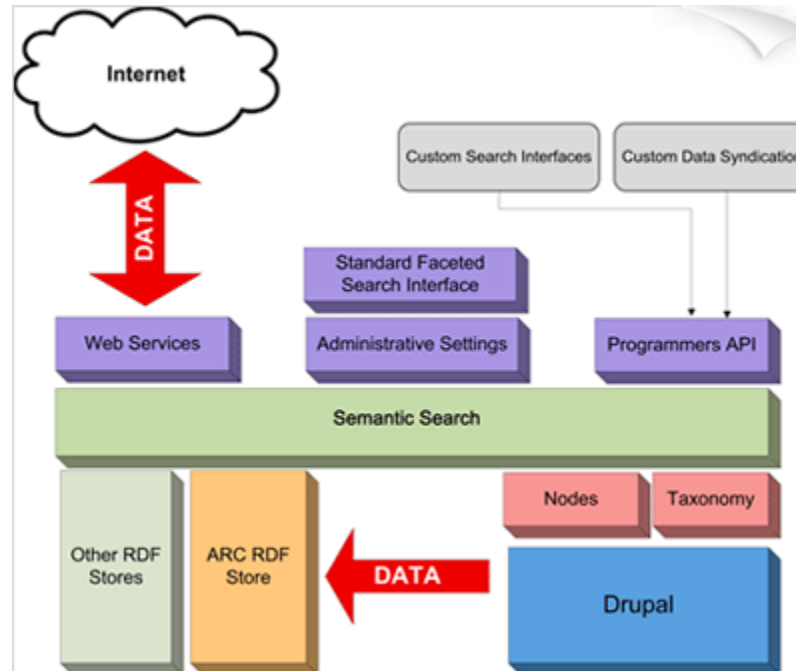
Facebook Open Graph



David Recordon



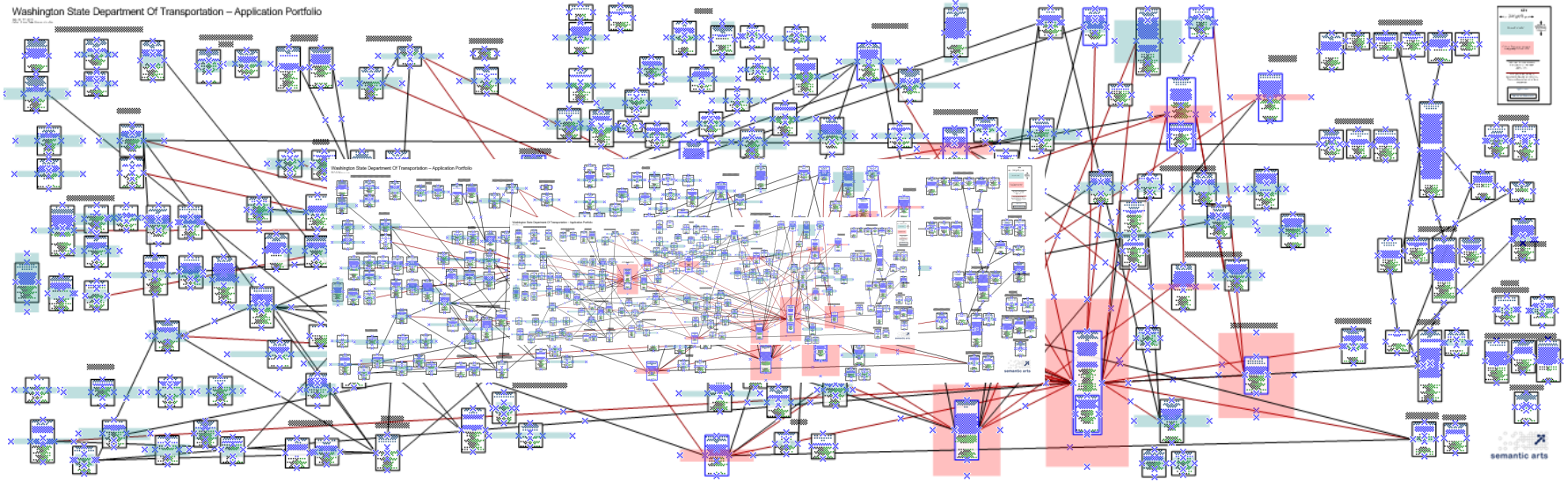
Semantic Search



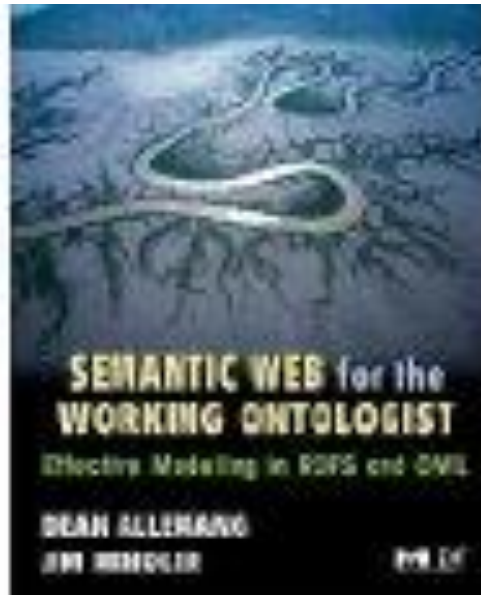
Enterprise Integration



Washington State Department Of Transportation – Application Portfolio



Hendler and Allemang's Keynote Semantic Web for the Working Enterprise



Maybe we've already crossed...

ORACLE

Raytheon



SIEMENS

Microsoft

VC's, M&A and Pitch Slam



Source: www.svtarot.com

Maybe We'll Be Talking About What Comes After the Bowling Alleys



The Power of the **Semantic Web**
to Transform Your Business

David Siegel

*Author of **Future Your Enterprise***



semantic arts

Web of Things

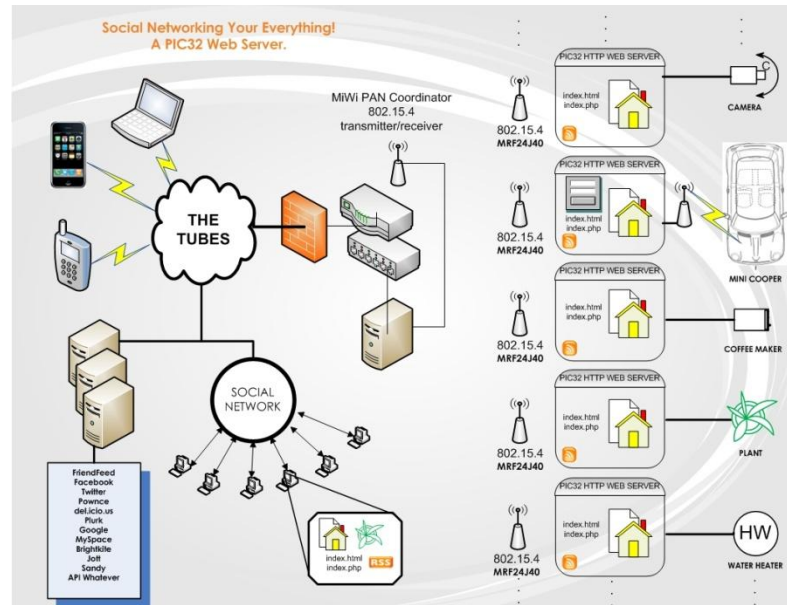
We currently have 1 billion connected users on the web

Over 20 billion indexed pages

Get ready for the “web of things” or the “internet of things”

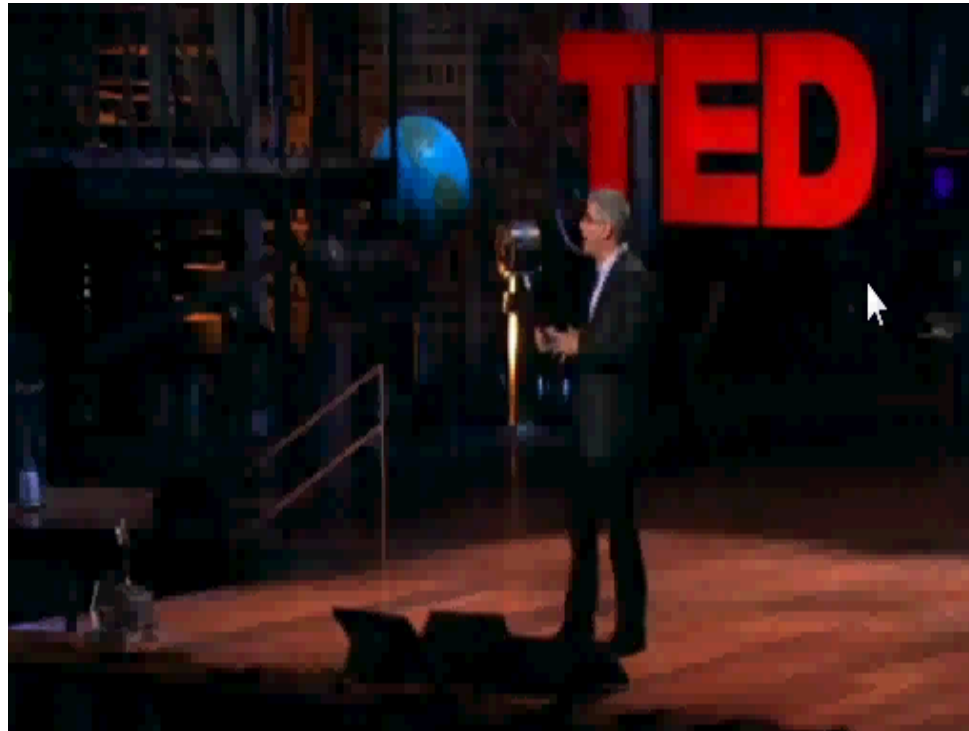
Over 1 trillion connected and addressable devices, sensors, actuators and the like

There aren't enough humans to analyze and categorize all this



Nicholas Christakis

Thoughts on Structure

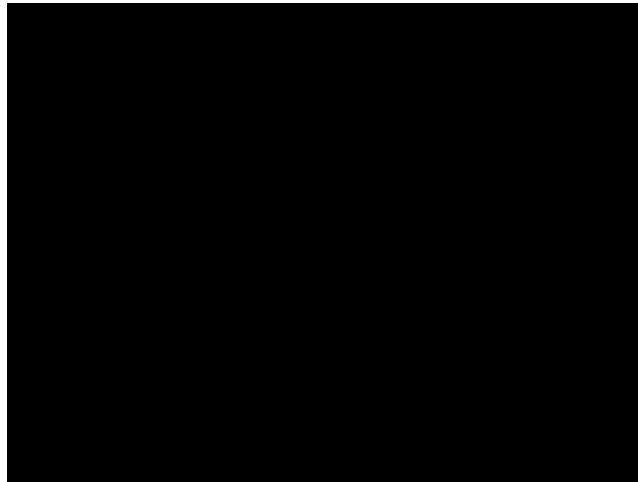


Think “Emergent Structure”

Let me make a few more predictions



Dr. Seuss Said It Best



“You’d never see half if you had forty eyeses.”

Dr. Seuss