

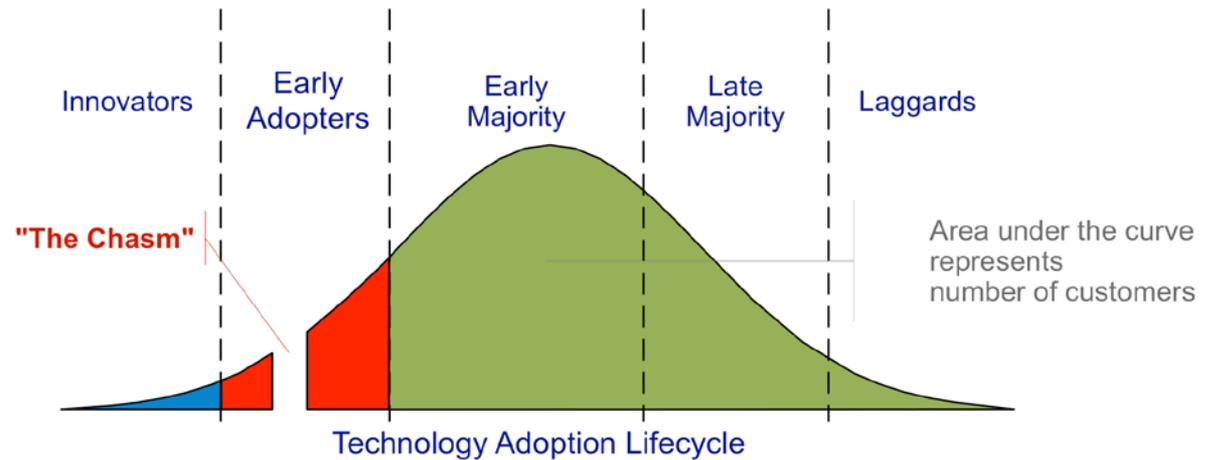
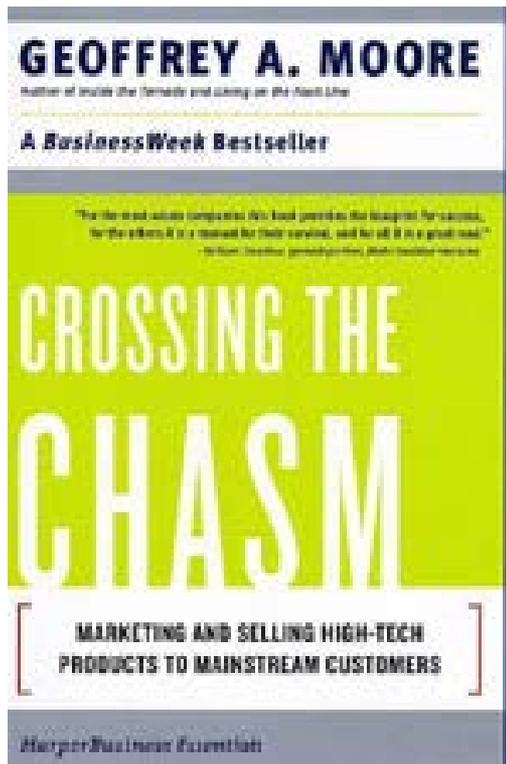
# FIBO Development Methodology Q2 Update

June 17, 2014  
Boston, MA

Dennis E. Wisnosky  
Founder, Wizdom Systems, Inc.  
Senior Advisor EDM - Council

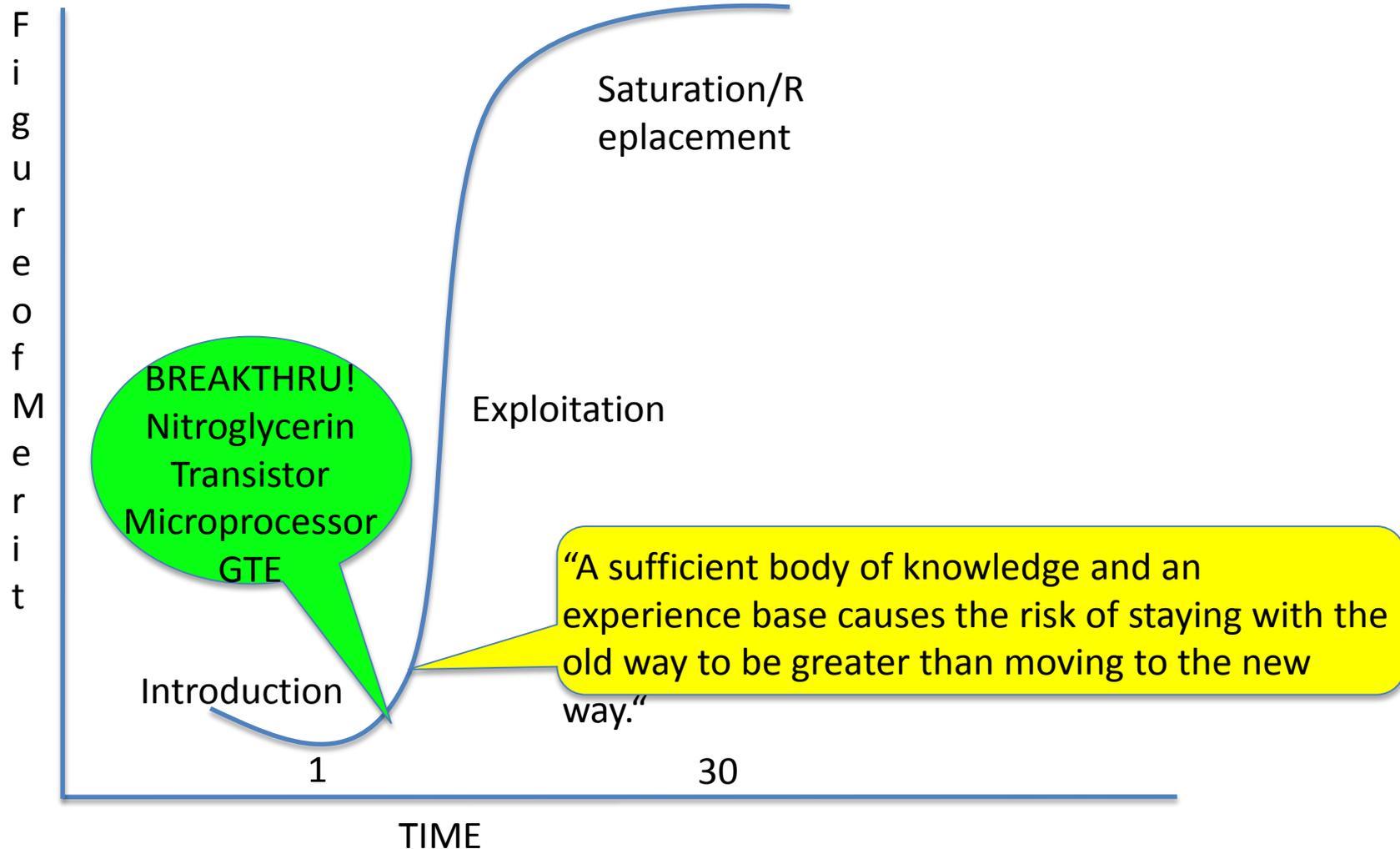


# What is the Chasm?



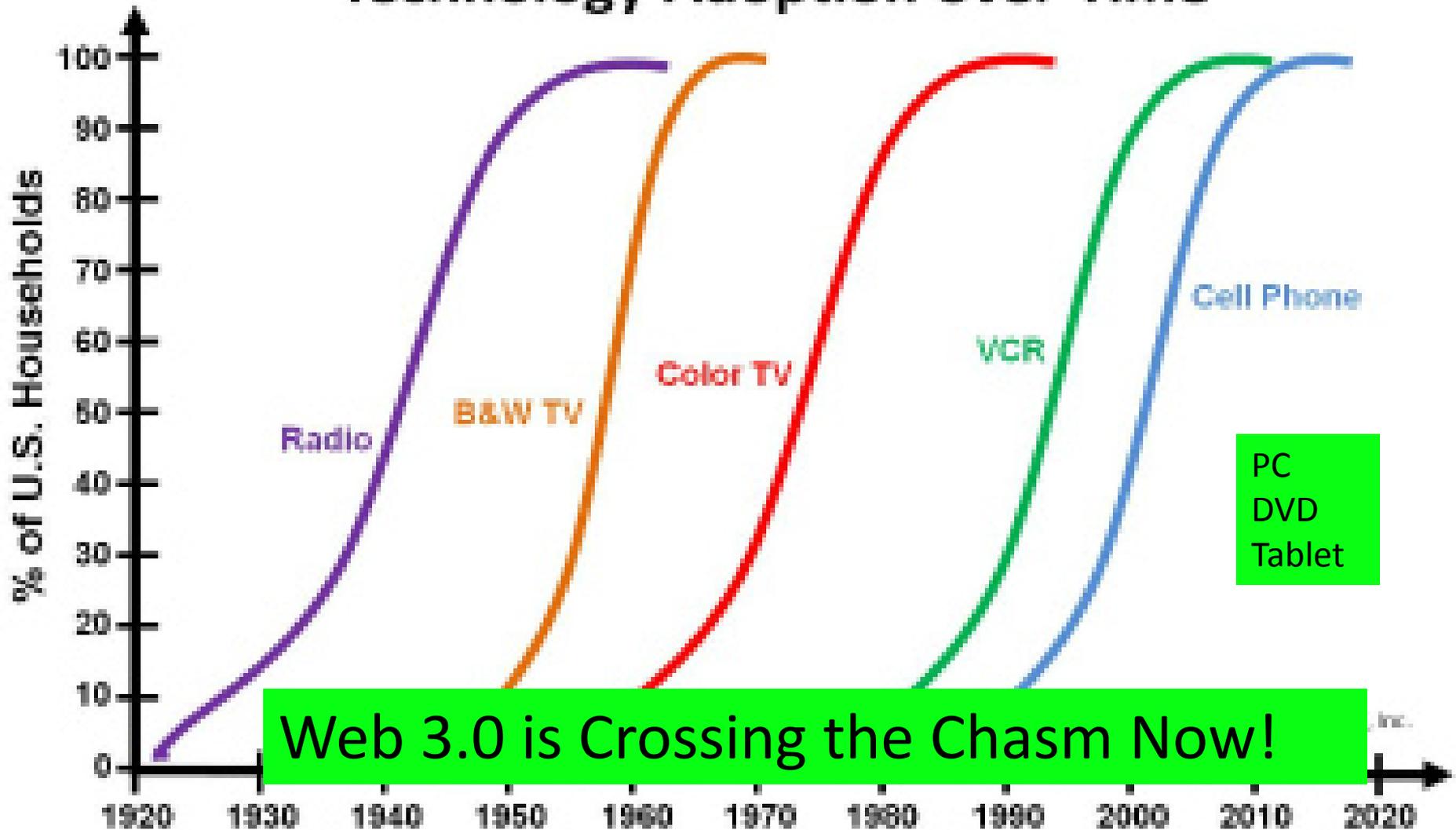
The Chasm is Crossed When the Risk/Reward Ratio Flips!

# S Curve – New Technologies

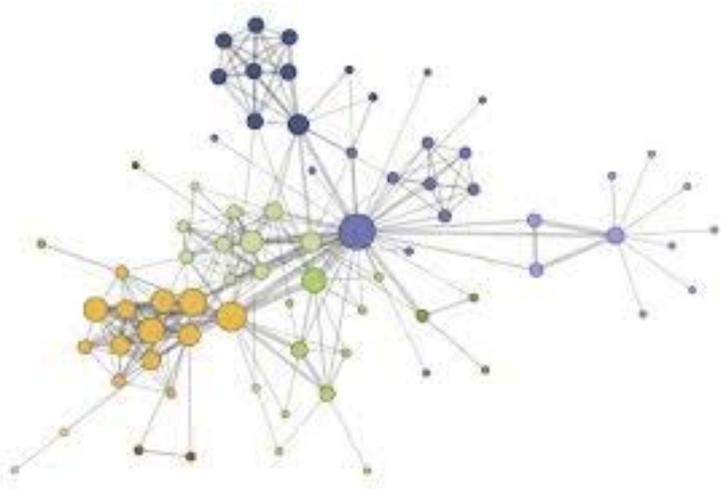


# All Innovation Follows this Pattern

## Technology Adoption over Time



# The Semantic Web is Crossing the Chasm



1999 DARPA

2001 Scientific American Article

200? Web 3.0

Oracle 11GS

IBM DB2, Watson

Facebook Graphs

Google Knowledge Graphs

Much Acquisition Activity

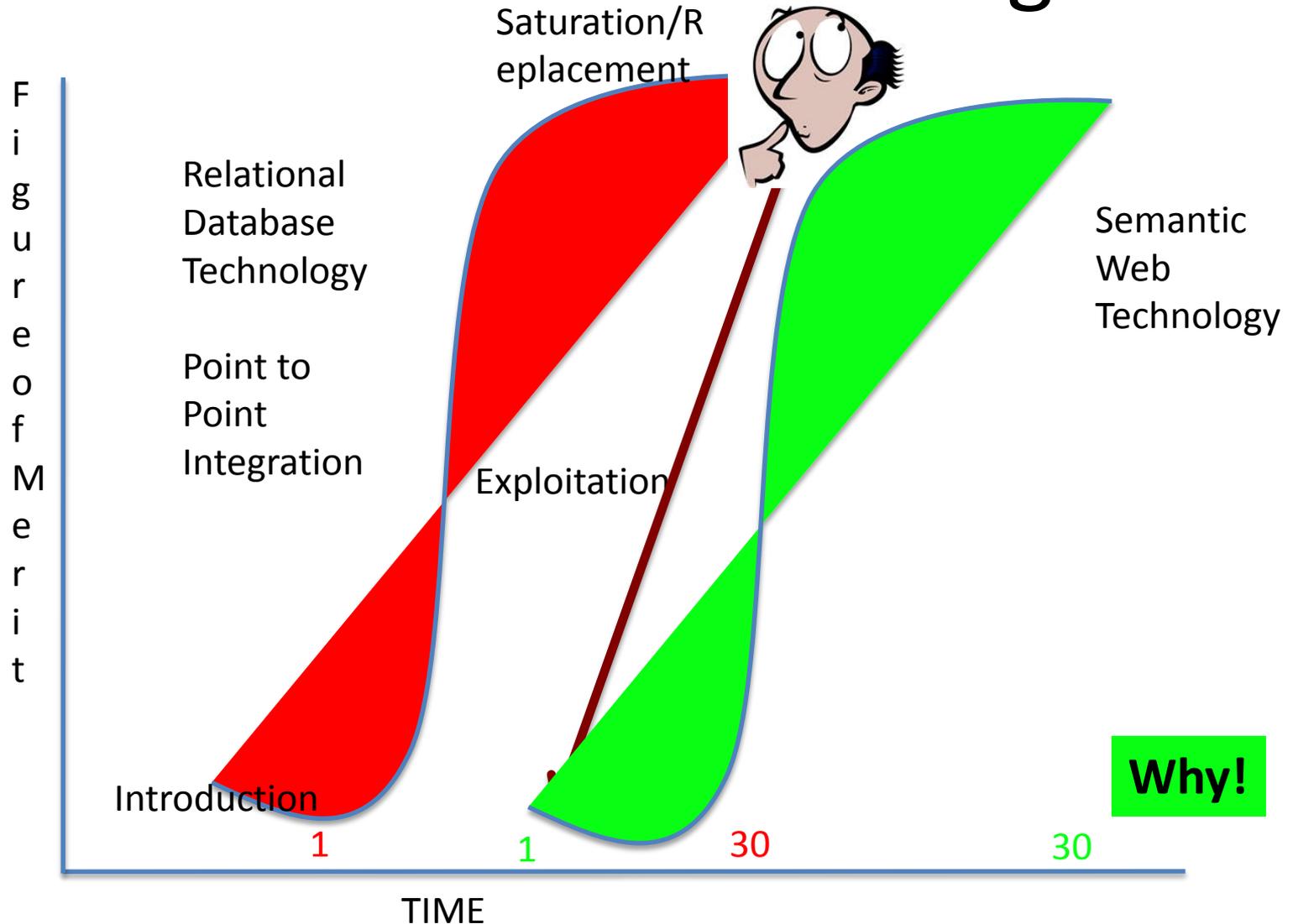
[Pinterest - VisualGraph](#)

Google -Metaweb, Freebase,

Apple - Siri

**Out With the Old, in With the New!**

# S Curve – New Technologies

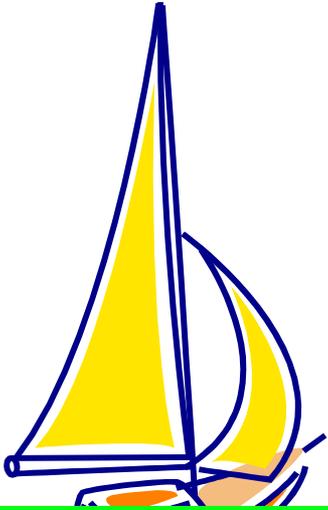


# Adopt 21<sup>st</sup> Century Data Management Principles and Technology

- [The Office of Financial Research To Look Hard At FIBO For Financial Instrument Reference Database By Jennifer Zaino on March 4, 2014 12:04 PM](#)
- There is a need for “an intelligent semantic network for systemic risk analysis.” Basel Committee on Banking Supervision in June 2013 issued for comment a paper entitled Supervisory Framework for Measuring and Controlling Large Exposures. <http://www.bis.org/publ/bcbs246.pdf>

**There is a Need for a Common Vocabulary!**

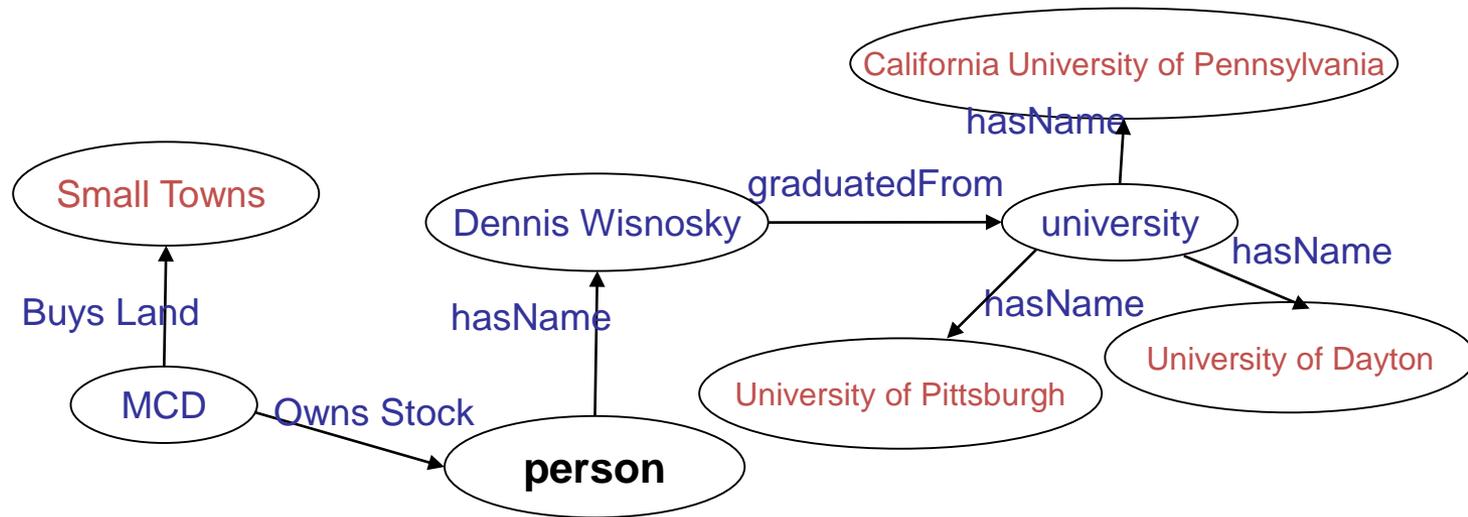
# The need for a Common Vocabulary



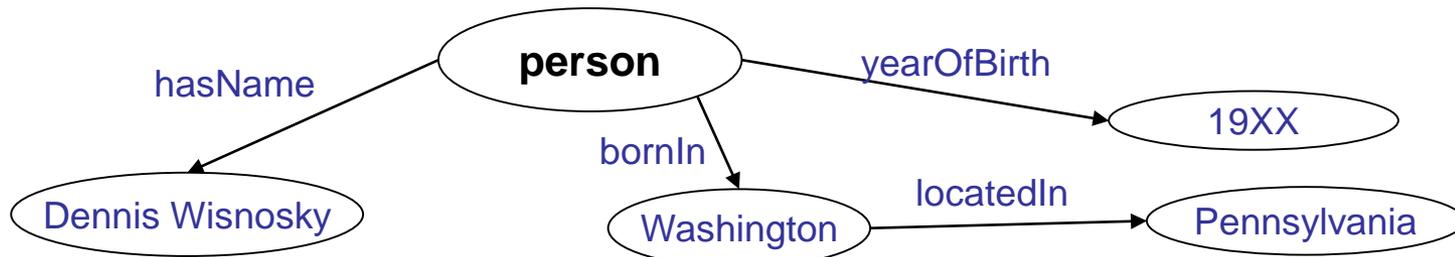
“Now! *That* should show you a few things around here. **There is a Need for Web 3.0!**”

# Common Vocabulary in Action

DBpedia  
(Wikipedia)  
Dataset



DoD HR  
Dataset



Wikipedia Data: Does Dennis Wisnosky Own MCD Stock”?

DoD HR Data: Where was D

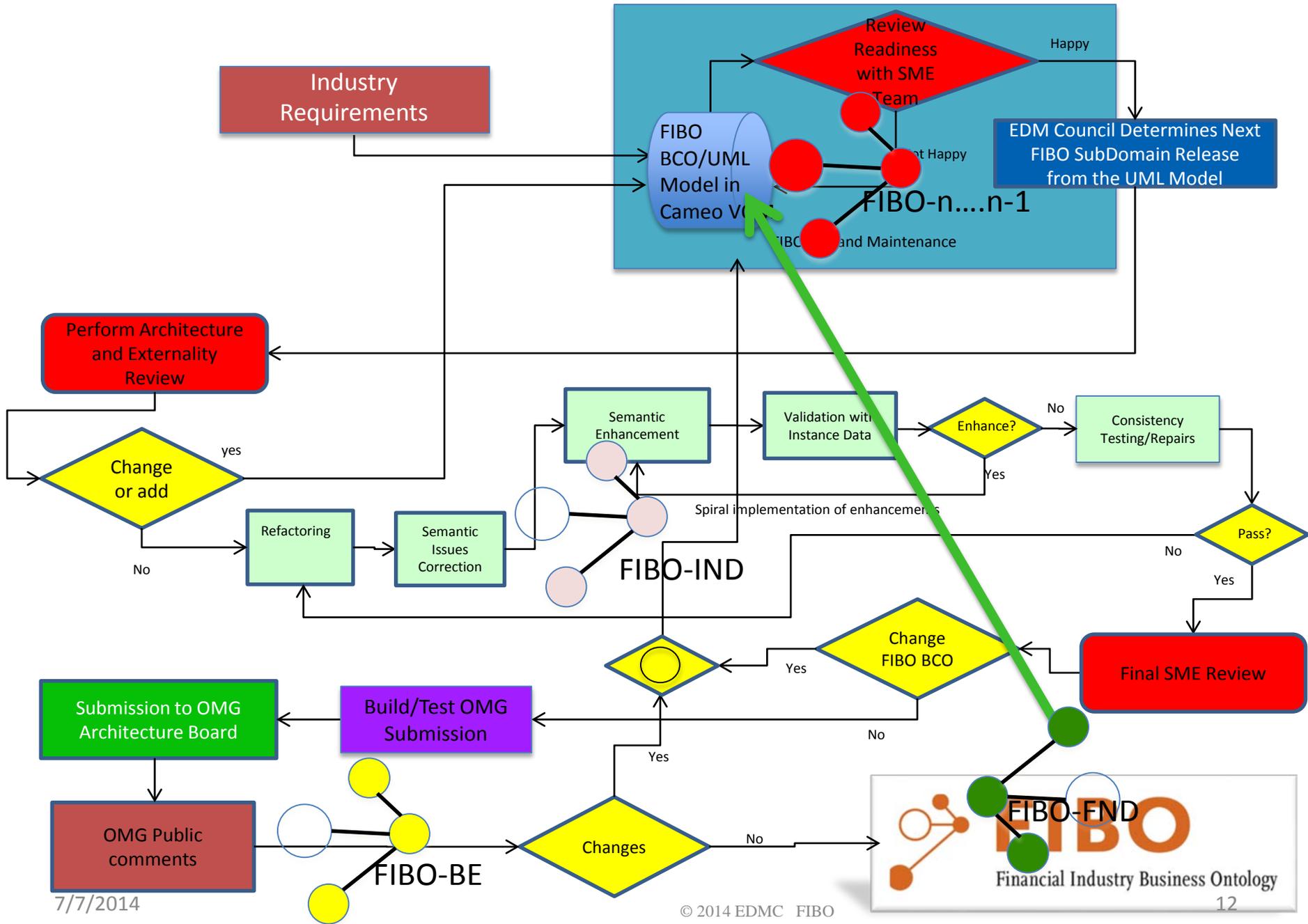
Linked Data: Where was the pe

How We Will Build This

# FIBO Eco System

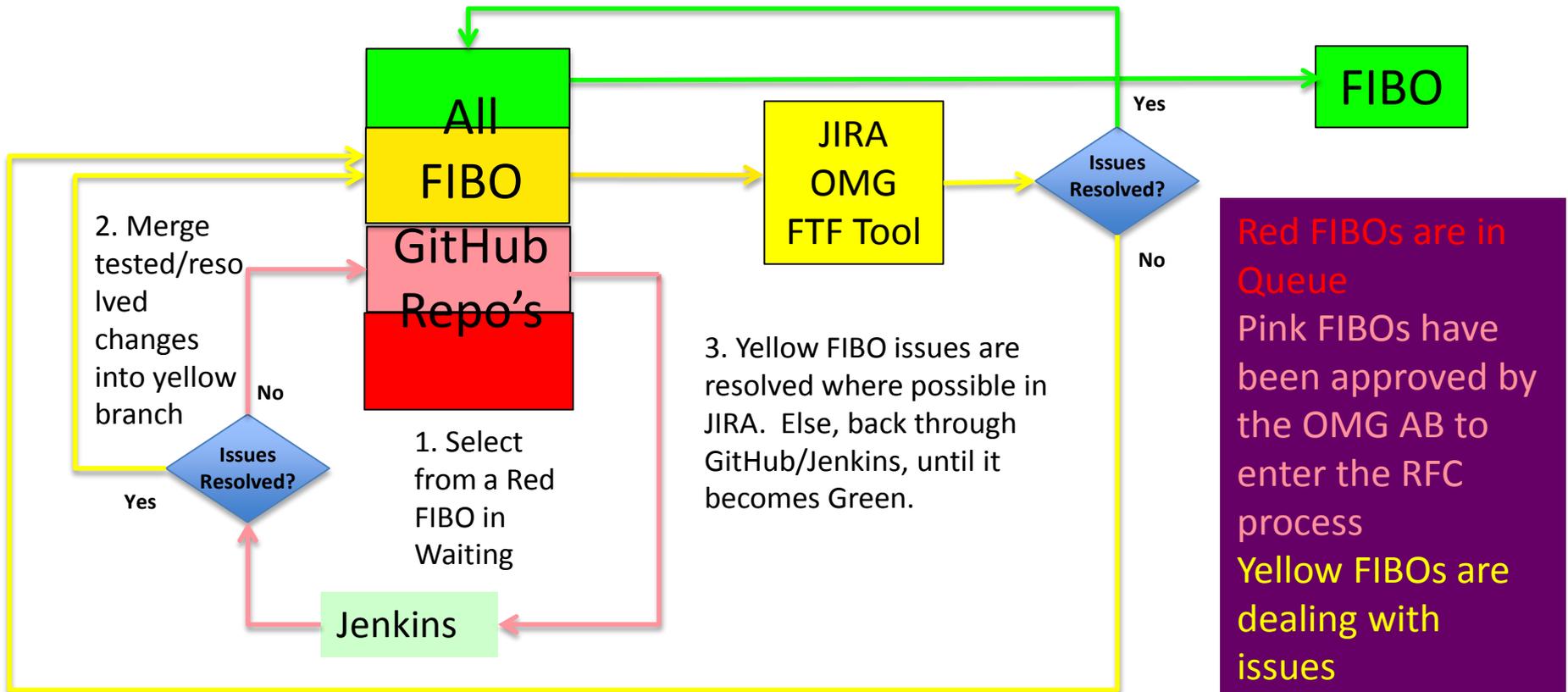
1. provide a collaborative environment for describing FIBO status and work in progress on the various financial instrument ontologies, with guidelines for methodology, etc., possibly using WEB-Protege and other OWL-2.0 compliant tools as they emerge. This environment enables issue management, change management, configuration management, development/maintenance work and deployment to be accomplished through at least three mechanisms:
  - (a) a triple store with a true SPARQL endpoint and reasoning capabilities containing all of the FIBO OWL-2.0 ontologies suitable for unit testing using front-end tooling such as Jenkins, and for demonstration using open source display engines such as Callimachus
  - (b) a business facing web presence to enable FIBO users to look up terms, their definitions and relationships viewable in tabular and standard FIBO graphical formats
  - (c) development and deployment of the ontologies, on an extensible collaboration platform such as GitHub for development / maintenance, testing and deployment including posting and/or configuration - linking of all content,
2. provide the basis for use of Jena and other mainstream RDF capabilities,
3. provide the ability for people to use ODM and XMI compliant tools as they emerge,
4. provide capability that all FIBO work is based on use of native RDF/OWL data stores with mappings, conversions and interchanges being transparent to users.

# FIBO Development Process

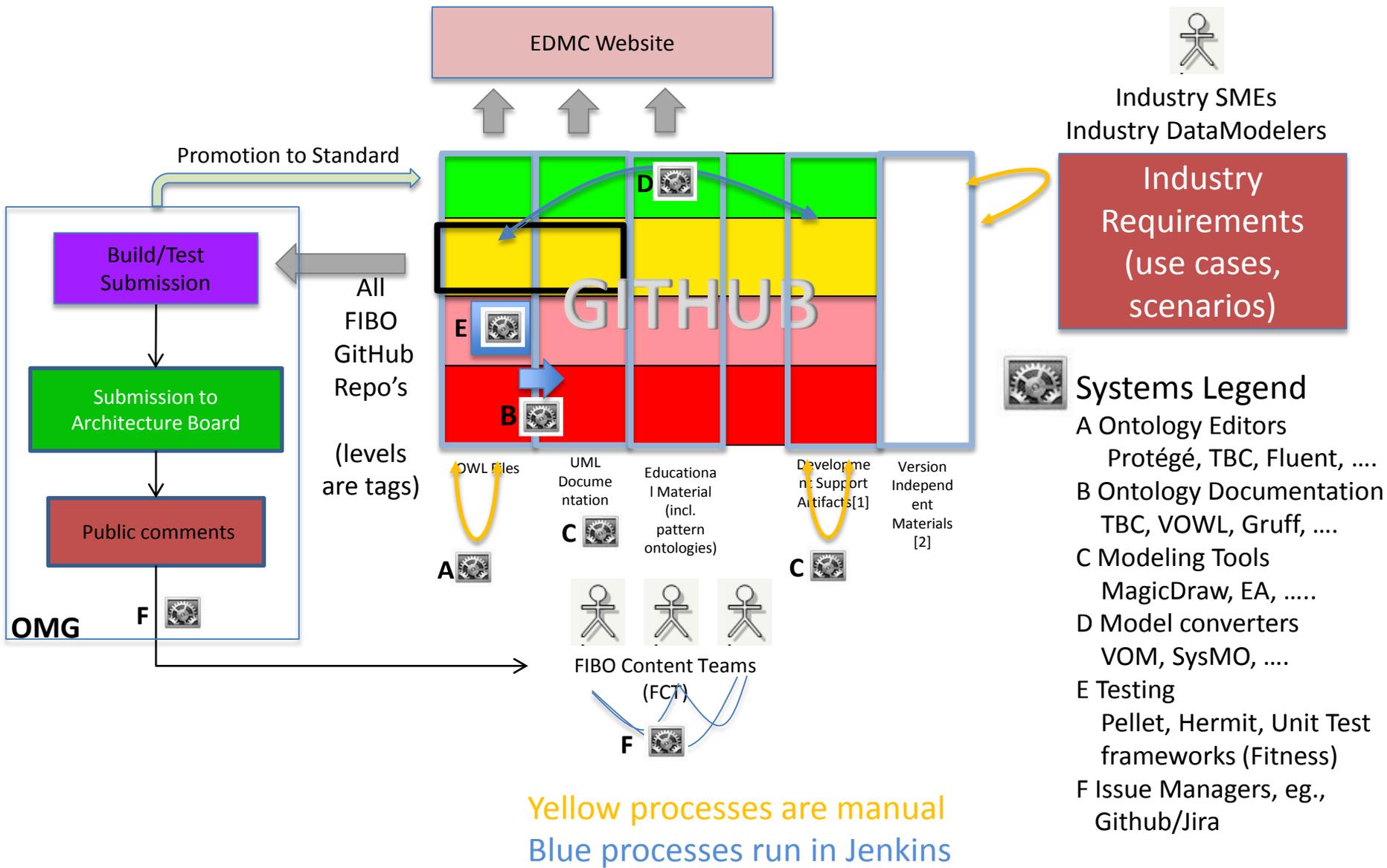


# FIBO GitHub Jenkins JIRA Process

4. Tag the yellow branch. This is effectively the publication of a new "Green FIBO"

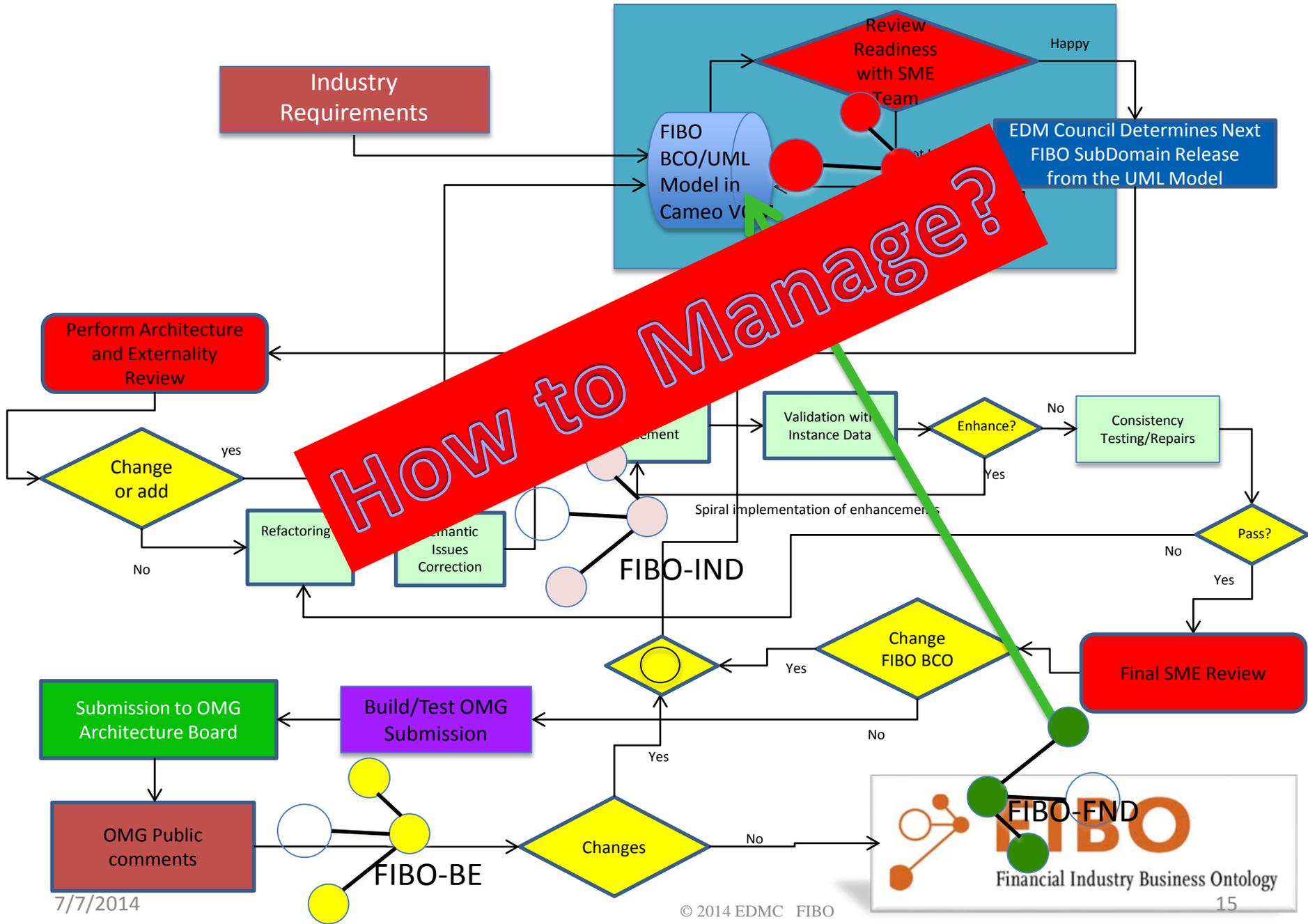


2. Red FIBO becomes Pink as it enters the GitHub/Jenkins loop. When it becomes Yellow it enters the OMG process through the FDTF and the AB.



[1] incl. MD files, VOM files, TopBraid layout files, protégé catalog files, etc  
[2] incl. Use Case documents, demo scenarios, etc.

# FIBO Development Process



# FIBO Development Scenario - 1

Reference Data (product) Semantics									
	Domain	Sub-Domain	Class	Dependency	OMG	Substantive	Model	Initial	
(FIBO 1.0) Major Milestones	Phase 1	Foundations				X			
		Business Entities				X			
	Phase 2	Indices and Indicators					X		
		Common Concepts	(all Instruments)				X		
		Common Debt Terms					X		
		Listed Instruments	Bonds					X	
			Equities					X	
	Common Concepts	Loans							
	Phase 3	Common Concepts	Derivatives						
	Phase 4	Derivatives	OTC	Rate Based	<i>Dependent on Indices</i>			X	
				Credit Default	<i>Dependent on Common Concepts for Loans, Common Debt Terms and Indices/Indicators</i>			X	
				FX				X	

# FIBO Development Scenario - 2

Reference Data (product) Semantics								
	Domain	Sub-Domain	Class	Dependency	OMG	Substantive	Model	Initial
Phase 5	Mortgage						×	
	Listed Instruments	Debt	Structured Finance	<i>Dependent on Bonds and Mortgage</i>			×	
			Money Markets	<i>Includes Repo, Treasury, Government, Agency, Tax-Free, etc.</i>			×	
Phase 6	Derivatives	OTC	Asset	<i>Dependent on Equities, Bonds and Common Debt Terms</i>			×	
			Commodity				×	
			Contracts for Difference				×	
Phase 7	Collective Investment Vehicles			<i>Dependent on Listed Instruments, Derivatives and Indices</i>			×	
	Derivatives	Exchange Traded					×	
	Loans	Other	General Purpose, Construction, Student, Miscellaneous				×	
	Rights and Warrants			<i>Dependent on Common Concepts for all Instruments</i>			×	

OMG = in RDF/OWL; Beta = Model Reviewed by SMEs; Model = Modeled in Enterprise Architect; Initial = Not Yet Modeled

# FIBO Development Scenario - 3

Market Data (time and date) Semantics									
	Domain	Sub-Domain	Class	Dependency	OMG	Substantive	Model	Initial	
Future Phase	Common Terms	Temporal Component					×		
	Equity Pricing						×		
	Debt Temporal Terms	Debt Pricing and Yields						×	
		Debt Analytics						×	
		Debt Pool Analytics						×	
	CIV Temporal Terms						×		
	Loan Temporal Terms						×		
	Trading Status						×		
	Credit Temporal Terms	Credit Rating						×	
		Credit Status						×	

**OMG** = in RDF/OWL; **Beta** = Model Reviewed by SMEs; **Model** = Modeled in Enterprise Architect; **Initial** = Not Yet Modeled

# FIBO Development Scenario - 4

## Process Related Semantics

Future Phase

Domain	Sub-Domain	Class	Dependency	OMG	Substantive	Model	Initial
Corporate Actions and Events						X	
Securities Issuance	Common Issuance Process Terms					X	
	Equity Issuance		<i>IPO, Other Equity Issue Processes, Primary Market</i>			X	
	Debt/Bonds Issuance		<i>Auction, Syndication, Other Issuance Processes</i>			X	
	Asset-Backed / Mortgage-Backed Issuance	Agency				X	
		Non-Agency				X	
Securities Transactions			<i>Trade, Post-Trade, Clearing, Settlement</i>				X
OTC Derivatives Transactions			<i>See OTC Derivatives Terms</i>			X	
Payments Processing							X
Portfolio and Holdings			<i>Positions and Holding Terms</i>				X

**OMG** = in RDF/OWL; **Beta** = Model Reviewed by SMEs; **Model** = Modeled in Enterprise Architect; **Initial** = Not Yet Modeled

# FIBO Development Process

1) FIBO Team - Pick or extract subdomain from BCO by looking at the UML visualization in the tool of choice

To get this we need:

Business facing rendering of restrictions

Describable as refinements and/or reuse of properties

Rendering of existing classes and properties and disjoints and inverses

Ability to update the model in real time

Ability to view and edit definitions

Ability to generate additional synonyms

Ability to review and edit provenance metadata

Creating spreadsheets of terms, definitions and synonyms and metadata, etc. reports for off line review

Create clean diagram by drag and drop classes from old diagram to new diagram while maintaining relationships for PPT presentations

2) Business SME's are now happy by an official sign off process

Convert to RDF/OWL and run QC (OOPS, OQUARE, etc.)

Consistency checks

Reasoners

Regression tests

# FIBO Development Process

3) Loop back to 1 to verify that BCO remains valid

4) Publish required OMG documents in the tool of choice

Write the Inventory File

Request document numbers for, and formally submit, each of the following:

Written specification

Inventory file

OWL files

ODM XMI

UML XMI

Model File (convenience document; has a number but is not part of formal specification)

Signed submission Letter (with IP rights declaration)

5) Repeat

# Extending the Competency



# Extending the Competency

## Build the FIBOs and the Process



**Build**



**Apply**



**Amplify**



Enterprise Data Management Council

Develop New and Utilize Existing Standards, Frameworks & Guidance

- Semantic Technology and Business Process Modeling – OMG/W3C
- Strong FIBO Roadmap and Strategic Framework
- Public FIBO Methodology Document
- Accessible Repository (RDF/OWL) for all stages of FIBO Release Packages



Object Management Group

- Governance and Configuration Management through OMG Architecture Board
- OMG Public Comments and FIBO Changes

Adopt & Adapt Current Research and Innovation

- Build and Maintain FIBO BCO
- Build and Test OMG Submissions
- Establish and Mentor a FIBO Content Team (FCT)
- Equip the FCT to support targeted industry partnerships in implementing FIBO
- Perform FIBO Change Final SME Review

FCT

# Extending the Competency

## Deploy FIBO Change Teams (FCT)



Build



Apply



Amplify



Support the application of FIBO to Pilot Projects through the deployment of the FCT(s)



### Immediate Impacts

- Industry acceptance of FIBO
- Reduced time to deployment
- Accelerated FIBO development
- Improved Financial Data Management due to FIBO Network effect

### EDMC Involvement

- Develop FCT's that support the roadmap and industry priorities, i.e. Financial Instruments Common Concepts FCT
- Ensure the FIBO BCO Repository and Process supports FCT
- Mentor the FCT to ensure success and utilize feedback to improve the Agile Change Process

### Required Activities

#### FIBO Strategic Framework

- Develop an Agile Change Process that involves the parallel building and maintenance of FIBOs
- Maintain the Roadmap and Repository
- Define FIBO Competency and Conformance
- Develop and Support a self and independent assessment capability of conformance to FIBO

# Extending the Competency

- Institute parallel FIBO Content Teams (FCT), to roll out multiple FIBO's in parallel.
- Implement a Pilot at the beginning of the FIBO Q2 process.
- In addition to completing FIBO-IND, The FIBO Core Team (PEM) will work as mentors to this FCT and advance the FIBO Build/Maintenance process in parallel.
- Because the FIBO Architecture will be constantly changing, as FIBO's are built in parallel, it must be reviewed and modified within the Externality Review process.
- Write A FIBO methodology document that will be used by every FCT.

# FIBO Content Team (FCT)

- 3-5 People mentored by a PEM
- Team leader from within the Finance Domain
  - An SME who understands the idea of Ontology
  - An Ontologist who understands a Finance Subdomain
  - A qualified super Ontologist
- SME's from within the Subdomain

# Extending the Competency

## Interact with FIBO Use and Extension



Build



Apply



Amplify



### Amplify Change Introduction, monitor and adjust change transfer



#### Amplification Plan

- Encourage graduation of an FCT into a Pilot Project
- Proactively monitor industries that are implementing FIBO
- Measure and record industry ROI after FIBO transition
- Support the self and independent assessment process and consolidate results
- Partner with internal and external OMG and Financial Education Services

#### EDMC Efforts

- Provide information and messaging that supports cultural adaptation
- Continue to refine an implementation methodology both for the advancement of the FIBO Standard and the change to industry Financial Data Management and Reporting
- Develop strategy for FIBO data technologies and methodologies to transform interoperable business services industry wide

#### Employ Proven Research and Development Implementation

- Industry Proof of Concepts
- OMG Technical sessions
- Bootstrap application of FCT Services

# Extending the Competency

Build – Apply Amplify

## Build

Standards and Frameworks  
Research and Innovation



Enterprise Data Management Council (EDMC) working with the Object Management Group (OMG)

Current and Emerging Technologies

## Apply

FIBO Changes Based on Implementation Experience

FIBO Strategic Framework

FIBO Changes Based on FCT Experience

FIBO's



Agile Change Strategy

Change Data Management Methodologies and Policies

## Amplify

FIBO Externality Review

Monitor FIBO Communities

Implementations

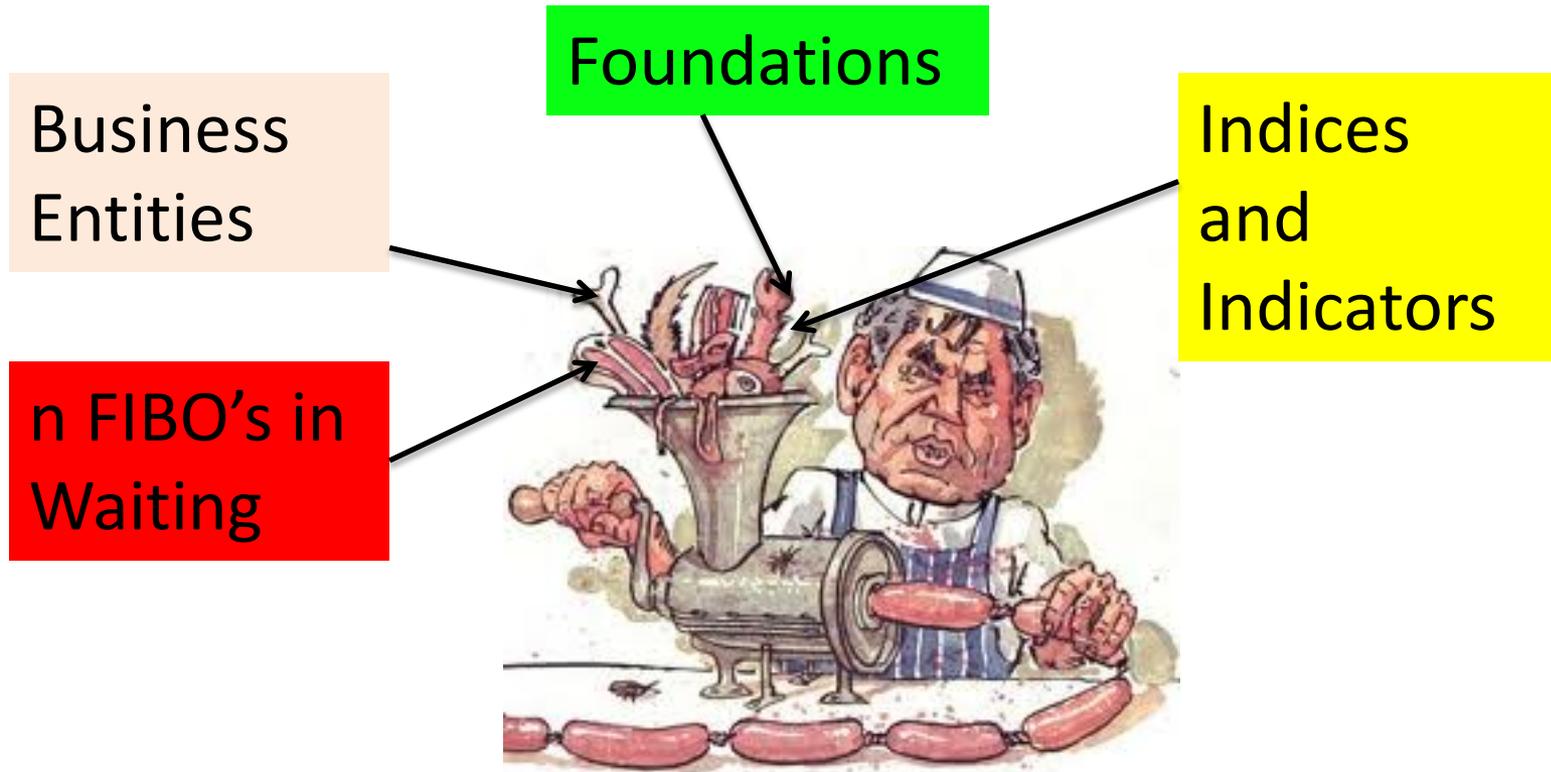
Transition via Enterprise Partnerships

Growth through industry relationships



FIBO Content Team – Supported by a Methodology Document and the EDMC/PEM

# FIBO Guarantees Sausage Making



# The Ask!

- Help improve the Process
- Work on the tooling
- Form your own FIBO Content Team along the lines of slide 17.

# Thank you!

Questions?  
Dennis@wisnosky.net

