FIBO

Financial Industry Business Ontology

Quality Considerations for an Industry Standard Ontology

Mike Bennett, EDM Council

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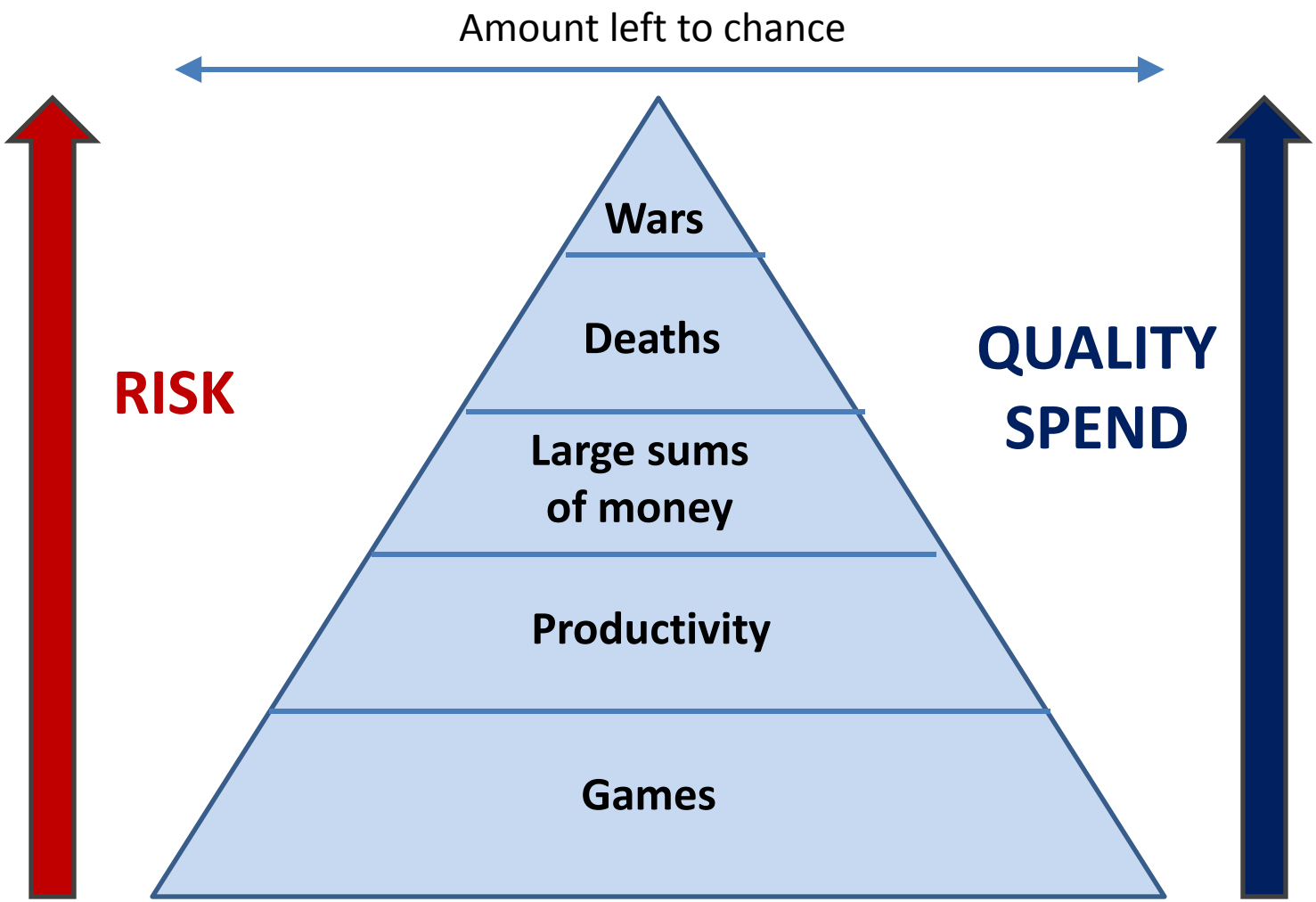
Overview

- Why Methodology?
- Standard ontology lifecycle positioning
- Quality considerations for conceptual models
- Quality considerations for standards
- FIBO Examples, open questions
- Methodological requirements

Why Methodology

- Deliverable needs to satisfy the requirements of all stakeholders
  - Methodology = “demonstrate control”
- Reduce dependency on specific individuals
  - For a proposed standard like FIBO, what is put forward must not be limited to the understanding of one or other sub-set of the stakeholders
  - Future iterations must conform to all of the stated requirements developed by those stakeholders

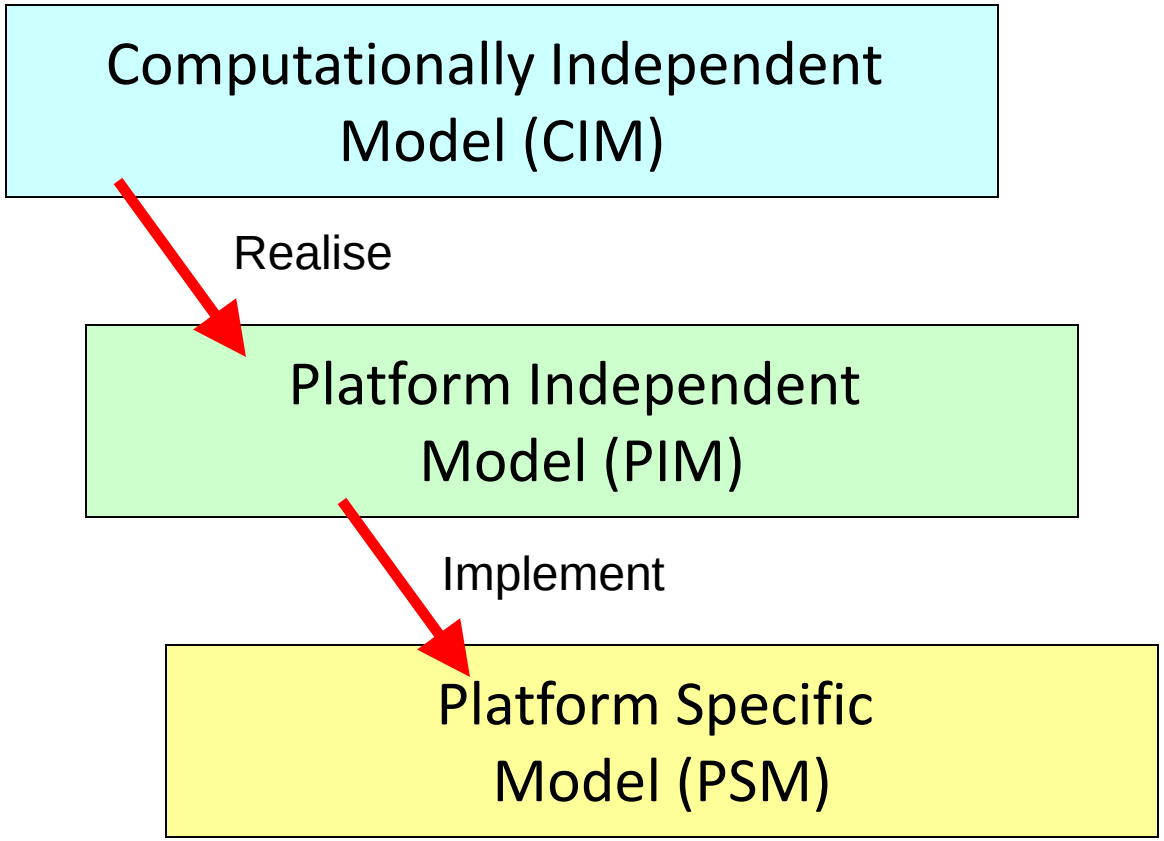
Why Methodology?



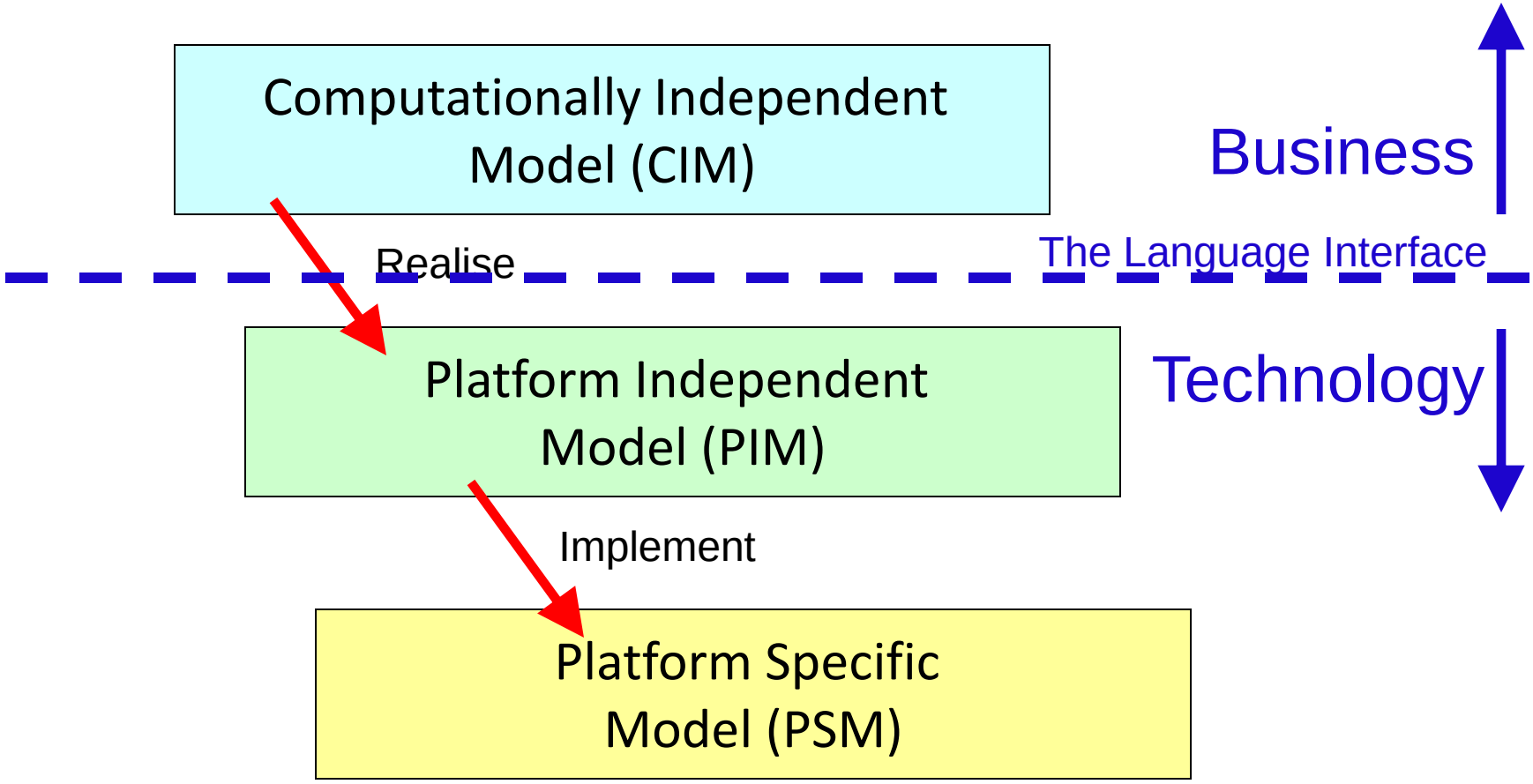
The Genius / Methodology Balance

Whether you choose to invest more in smart individuals or repeatable methodology depends on whether what you're doing needs to be repeatable, and what the risks are

Model Positioning



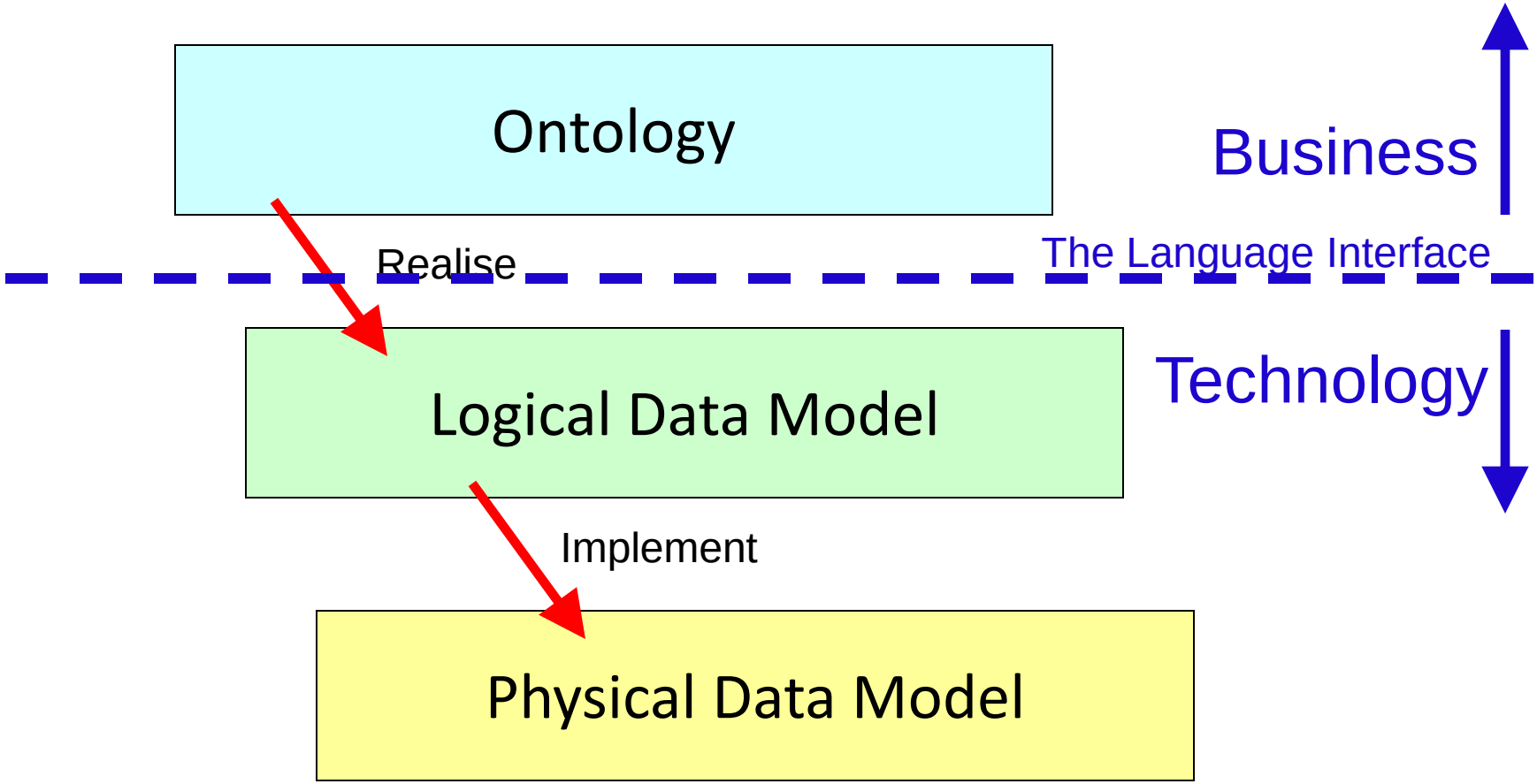
Model Positioning



Types of Computationally Independent Model

- Requirements Specifications
- Use Case models
- Business Process Models
- Business Vocabularies
- Business Ontologies
- Business Motivation Models
  - etc.

Conceptual Model for Data



Quality Considerations for Conceptual Models

- Independent of implementation technology
- Validated by business
  - So being readable by actual business people is a requirement!
- Implementable
- Formal

Quality Considerations for Standards Ontologies

- As for conceptual models

Plus

- Independent of individual use cases
  - A business conceptual ontology which is to be used as a standard needs to define all of the industry terms, definitions, properties etc. so to be capable of implementation in all applicable use cases for integration, development etc.

Standards as Ontologies: the Bonus

- Use of semantic notation (instead of e.g. vocabulary) provides:
  - Formal logic
  - Capable of expressing meaning (if done right)
  - Model semantics: everything is a Thing
- Plus:
  - The ability to derive applications based on reasoners, semantics queries etc.
  - The key word here is **derive**: the application is, by definition, not the same thing as the conceptual model

FIBO Examples, Open questions

- Which of the things that are needed for an operational ontology, should be included in a standards conceptual ontology?
  - DL-safe model patterns?
    - Reasoning is an application concern, so no
  - Use of OWL restrictions?
    - These are almost impossible to convey in business presentation diagrams!
  - Types of Object Property

Open questions

- The requirements for an operational ontology may or may not be appropriate for a conceptual ontology
  - But there is no reason not to apply some of these if they do not compromise the conceptual model
- Issues that impact on this:
  - Presentation to business stakeholders
    - As tools develop which can present business-facing renditions of ontologies, some of the things you want expect to see in “Good” OWL may become possible to represent to business
  - Precision and completeness of the model
    - Presently we have used only that sub-set of the OWL logic which can be rendered in the business-facing diagrams and explained in set theoretic terms

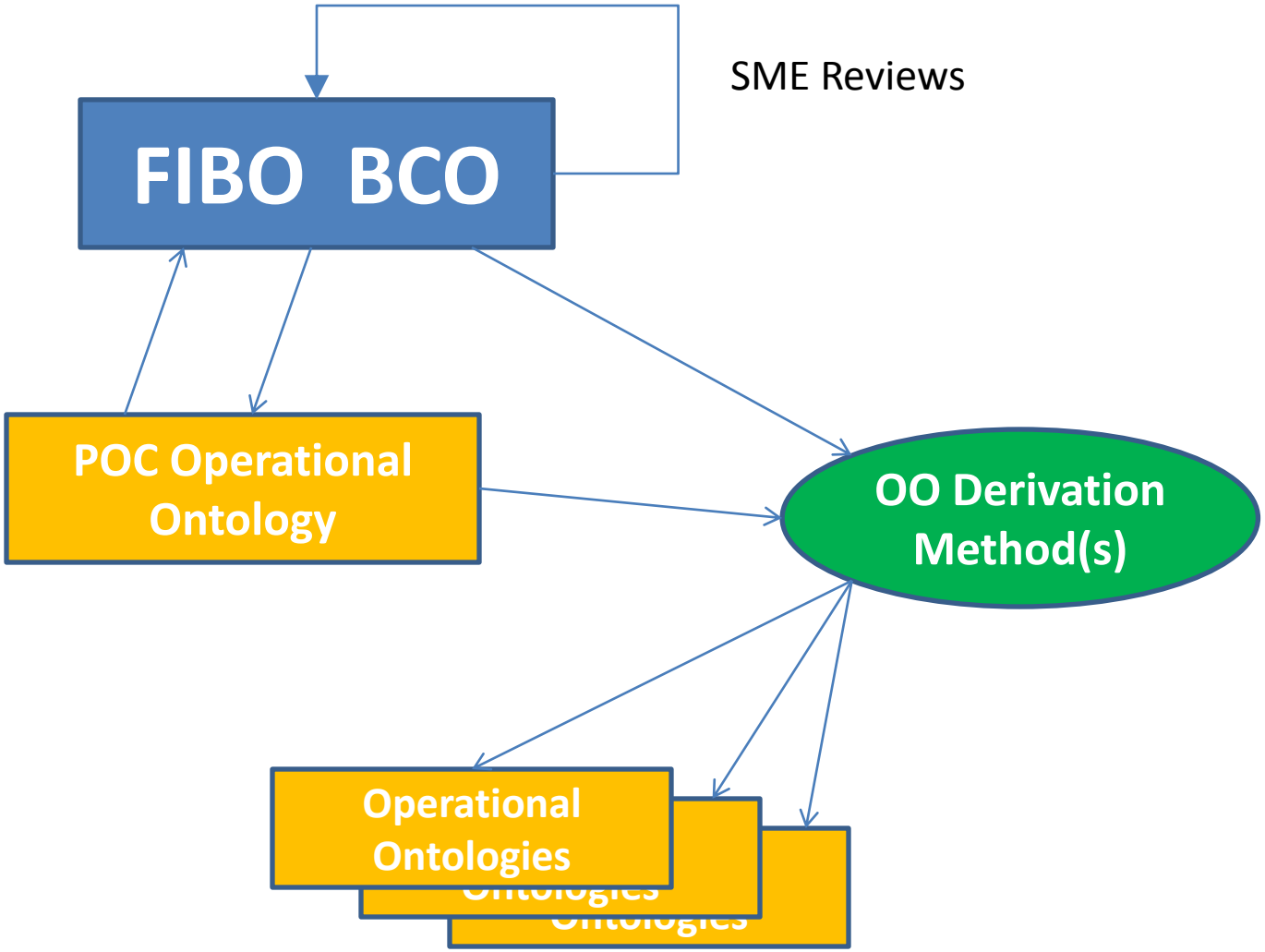
Methodological Considerations

- Ensure that business domain expertise is captured
  - Terms and their relationships / properties
  - Formal written definitions
- Ensure that all terms are grounded in meaningful concepts
  - Accounting, legal, mathematical etc.
- Abstraction of concepts
- Use of existing standards ontology material
- Conformance with applicable modeling requirements

Methodology Components

- Written process to be followed to derive operational ontologies from conceptual ontology content
- Tools for proving mathematical completeness, other quality measures
- The formal methodology needs to define what tools and techniques are applied at what points in the written development process, to what artifacts, to what end.

Methodology Outline



Questions?