

# **HC-05: Ontology of Ontology Evaluation**

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3 May 2013

Ontology Summit 2013 Symposium

# Purpose, Goals, & Realities

- Vision:
  - Use ontologies, don't just talk about them
  - Use process of ontological analysis to clarify thinking
  - Create product that can be used
- Reality: 1 day
  - Focused on analysis, informal modeling
  - Used simple graphs and text to capture analysis during and after discussion
- Participants:

Joel Bender	Mike Dean	Doug Foxvog	Ali Hashemi
Bob Smith	Pavithra Kenjige	Astrid Duque	Amanda Vizedom
David Whitten	Peter Yim	Ramos	
- Materials:
  - Details as it happened: [http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2013\\_Hackathon\\_Clinics\\_OntologyOfOntologyEvaluation](http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2013_Hackathon_Clinics_OntologyOfOntologyEvaluation)
  - Outputs and continuing development: <https://www.zotero.org/groups/ontologysummit2013/items/collectionKey/PVGF24A6>

# Requirements Development: First Steps

- Initial statement: Cover important evaluation-related concepts “from various materials presented during the summit, especially those that identify:
  - evaluable characteristics of ontologies,
  - metrics and methods for such evaluation,
  - lifecycle stages
  - maturity models of ontologies and/or evaluation
  - useful faceting characteristics of ontology characteristics
  - characterizing ontology internally,
  - characterizing ontology externally,
  - characterizing relation of ontology specifics to particular use or application context
  - context dependence of relevance of characteristic to quality/suitability
  - context independence of relevance of characteristic to quality/suitability
  - automatability ... “
- Envisioned uses:
  - Ontology Summit PSMW
  - Modeling capabilities of tools & what their metrics, etc., mean
  - Capturing evaluation results for individual ontologies (for repository use?)
- Many references gathered into shared doc and reviewed

# Requirements Development: High Level Conceptual Model

- An **Ontology** is an entity that is generally realized as a (possibly singular) set of **artifacts** within an **organizational context**.
- An Ontology should have a defined **scope**,
- An Ontology should have a **intended use**
- An Ontology should have **stakeholders**, ...
- An Ontology can be **evaluated** according to a set of **criteria** (defined by **specifications** and **requirements?**), which can be divided along a **continuum** with two poles: **Intrinsic** and **Extrinsic**.
- An ontology evaluation criteria is defined by specifications and requirements.
- An ontology evaluation criteria may be intrinsic, extrinsic, or something between.
- Each evaluation event/activity has an accompanying **method**.
- There is a broader **context** which **motivates** the **creation** of the ontology
- There is a broader **context** which **motivates** the **team** which creates an ontology.
- An ontology also has a particular **lifecycle**, with a set of **phases** or **stages**, each of which may have particular evaluation criteria and characteristics which may **apply**.
- Additionally, the **purpose** and **intended use** of an ontology may imply that it has a set of characteristics, may **select a subset of evaluation criteria**.
- The **purpose** and **intended use** of an ontology may **select a subset of evaluation criteria**
- Moreover, there exist a number of **metrics** which can be deployed, which provide **visibility** into ontology characteristics.
- Characteristics, specification and requirements may also be **hierarchically** connected within themselves.

# Results

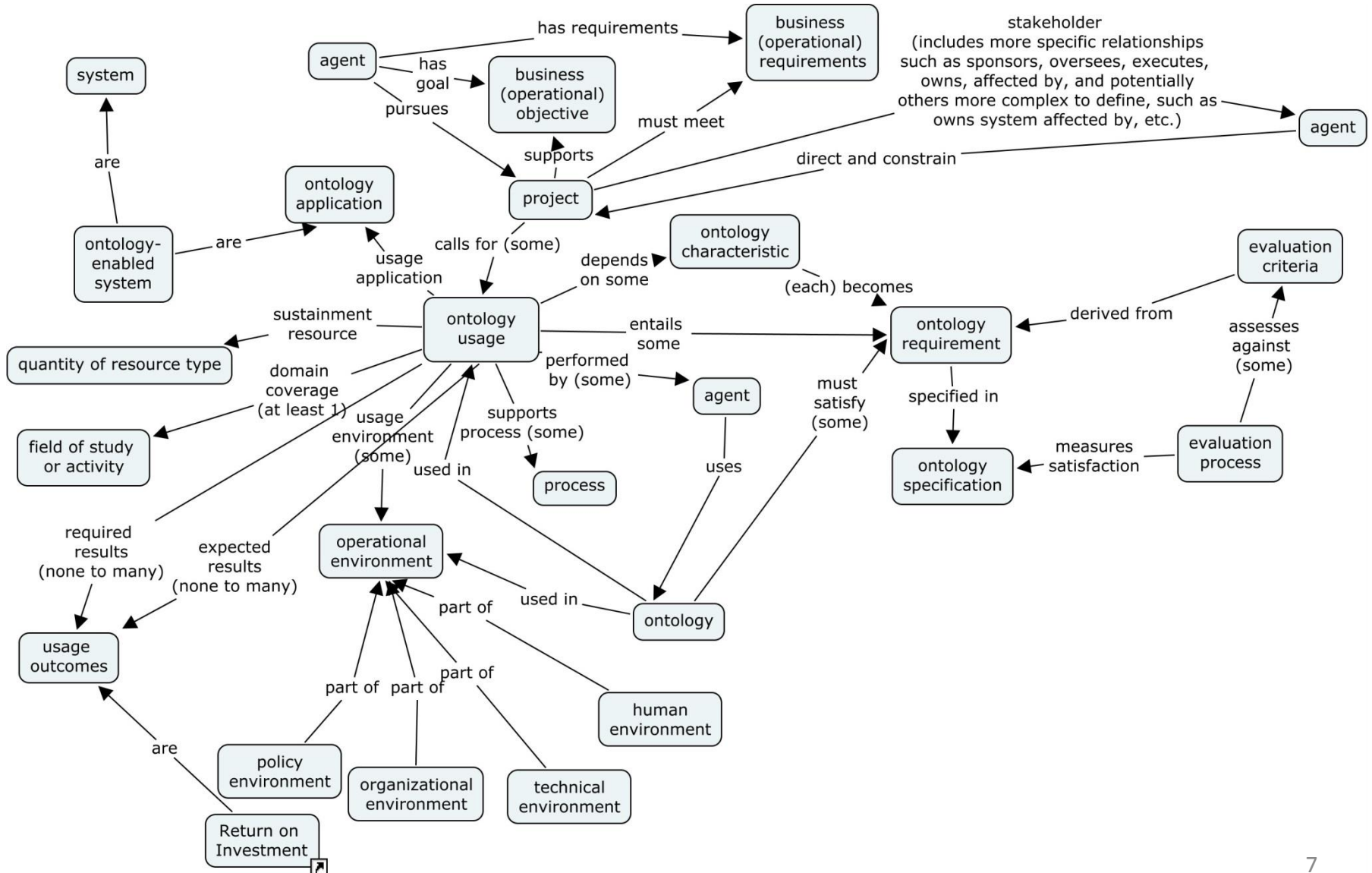
- Drafts of
  - concept definitions & (some) associated terminology
  - sub-graphs around focal concepts:
    - Evaluation Method, Life cycle, Organizational Process and Maturity Models, Ontology Usage, Ontology Characteristics, Ontology, Metrics, Evaluation Process, OntologyCharacteristicsOQuaRE
- Covered ground on some relationships less central in main summit, e.g.:
  - What goes into Ontology Usage
  - How does requirements development happen? Who is involved?
  - How do business and technical requirements relate?
  - How do requirements relate to Metrics?
  - How can Ontology Characteristics at different levels be related?
  - How should we understand different ways of grouping Ontology characteristics (or requirements)
  - How can this picture be help understand use of individual methods and tools (Generic Metrics - OQuaRE Metrics)

# End-of-hackathon to-do list

- Consolidate informal model pieces into single, intelligible model
  - In graphs
  - In English
  - Review and import or align with ICOM and OMV ontologies
- Formalize in OWL
- Formalize in CLIF
- Evaluate (and compare versions)
- Offer for use

# Sample- Informal Model: Ontology Usage

*(work in progress)*



# Plans & Status

- Complete 1<sup>st</sup> set of models:
  - Consolidated informal model (Cmap): in progress
  - Consolidated informal model (English) in progress
  - OWL formal model: first pass done, based on end-of-hackathon graph; will revisit after informal models done.
  - CLIF formal model: held for informal model completion.
- Evaluate & revise:
  - Evaluate each version with corresponding tools.
  - Compare models to each other.
  - Invite general review.
- Release:
  - into repository/ collaboration space.
- Coordination:
  - All interested, meet during Small Groups / Birds of a Feather session (Friday, 2013-05-03 at 3:15pm)