Establishing and Maintaining Business Value Alignment to Support Ontology Development

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Value Metrics, Value Models, and the Value Proposition
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Introduction

- Informed by active collaboration with Bo Newman, Bob Smith, and Joe Beck
- Based on work in the following areas
  - Alignment theory
  - Values-based decision making
  - Knowledge flow analysis and modeling
- Key ontology development risk areas
  - Synchronization of alignment issues and strategies
  - Disassociation
  - Dynamic semantics inherent to natural ontologies
- Potential Solutions
  - Knowledge flow analysis and modeling
  - Federated business value framework

Alignment

- Definitions of business value are alignment mechanisms
  - Seek to align ontology development effort with other organizational goals
- Engineered ontologies are alignment mechanisms
  - Driven by performance gaps
  - Solutions should be matched to the agent-specific alignment issues
    - » Changes to natural ontologies
    - » Engineered ontologies: Performance targets, Policies and procedures, Syntax-based data standards, Controlled vocabularies, Taxonomies, Fully-formalized ontologies
- Expect to find fractal relationships among the semantics of the project (perceived business value) and the semantics formalized by the project

Disassociation

- Values represent a synthesis of prior knowledge
  - Decision making is expensive
  - Economic efficiency drives abstraction and decontextualization to allow proven principles to be applied across behavioral contexts
  - Values “short circuit” Data / Information / Knowledge transformations
  - Risk of suboptimized, misaligned decisions increases with changes to behavioral context
- Disassociation risks typically associated with ROI
  - Discounted present value calculations
  - Inability to calculate financial impact of strategic value
  - Instabilities associated with wicked problems and enabling technologies

Dynamic Semantics

- Dynamic Semantics result from the interplay of Individual, Social, and Automated Agents and their associated ontologies
- Formalization doesn't stabilize the natural ontologies that they are based on
- Categorizing the semantic properties of interest can help isolate and prioritize the sources of semantic instability
  - Interpretive semantics
  - Contextual semantics
  - Aspirational semantics
  - Behavioral and conditional semantics

Knowledge Flow Analysis and Modeling

- Main components
  - Knowledge assets: Tacit, Implicit, and Explicit
  - Agents: Individual, Social, and Automated
  - Agent behaviors
  - Semantics: Interpretive, Contextual, Aspirational, Behavioral, Conditional
- Can be used to characterize organizational issues
  - Differentiate behavioral and semantic breakdowns/gaps
  - Identify agent types and their semantic formalization requirements
  - Isolate conceptual drivers and assess expected stability
- Requirements and value propositions based on characterized knowledge flows reduce alignment risks

Federated Business Value Framework

- Perceived value likely to differ across stakeholder groups
  - Specific semantic gaps and requirements typically tied to localized value-system optimizations
  - Consensus-based approaches can filter out strategic value propositions
- Recommend
  - Identifying core business drivers that span organizational contexts
  - Make individual operational units responsible articulating operational benefits
    - » Keeps the most volatile project semantics localized
    - » Allows “to be” Knowledge flows to be updated to reflect new opportunities and other conceptualization changes
  - Enables explicit change control mechanisms to be applied as changes to organizational meaning are encountered