Ontology Summit 2011 Track 3 Value Metrics & Value Models **Completeness? Rex Brooks Starbourne Communications Todd Schneider** Raytheon 18 April 2011

Value Models & Metrics

- Value Models What's important to the stakeholders
- Metrics Value Measuring Methodologies
 - How are these Measurements Made?
 - What do these Measurements Mean?
- Models: Formal ROI & Beyond
 - Do our Quantitative Metrics Make the Tangible Clear?
 - How do we Model the Qualitative Intangibles?
- The Value Proposition: What's the Benefit?
 - Do our Models Fit Stakeholders Wants/Needs?
 - Do our Metrics Focus on the Value Proposition?
- The Environment & Lifecycle: Obvious & Overlooked
 - What are the Scopes we need to Address?
 - How does Lifecycle Stage affect Models & Metrics?

Value Models



• Derived from Case Studies

Business Efficiency

Collaborative Operations

Business Agility

- Interoperable Business Services allowing new products and services
- Actionable Business Intelligence

Operational Efficiency

- Improved search & discovery
- Quicker, more precise responses
- Customer Satisfaction (internal & external)
 - Reduce CRM costs
- IT Efficiency
 - More agile and complex workflows



Varied by case study

- Business Efficiency
 - What cross cutting or business wide operations were changed
 - What was changed that saves time or improves performance
- Business Agility
 - What changed to provide agility
- Operational Efficiency
 - What operations were changed
 - What was changed that saves time or improves products
- Customer Satisfaction
 - How was customer frustration reduced
- IT Efficiency
 - What services were made more effective (e.g., QoS improvements)
 - More operations were improved

Value Models/Metrics Paradigm



Step 1 – Characterize* business or operational problem to be solved

IT efficiency Operational efficiency Business agility Business efficiency Customer satisfaction

- Step 2 Identify problem stakeholders
- Step 3 Categorize type of solution with OUF
- Step 4 Identify strategy to be used
- Step 5 Identify value model & metrics needed

Lifecycle Factors



- Lifecycle Factors
 - Initial focus of value models and metrics on the design-development and run-time operations phases
 - Synthesis brought realizations
 - Needed a shift in focus: Acquisition phase
 - No few models or metrics Needed Specialization
 - Value models and metrics for different lifecycle phases are different (but related)

Environment Factors



- Proposed ontology uses (i.e., solutions) operate in an environment
- Scale/scope of operational environment not explicitly addressed during summit

Standalone	Single department	\$100K
LAN	A few departments	\$1M
WAN	All departments/company	\$10M
MAN	Several companies	\$100M
Internet – Worldwide	All companies in same domain	\$1B

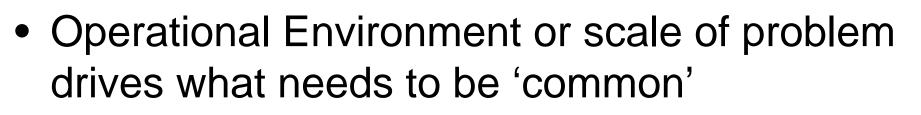
- Operational environment scope impacts
 - Value of possible solutions
 - Value models and their metrics for/of solutions

Environment - Interoperability



- Operational environment and solution needs usually referred to as interoperability
- Interoperability has
 - many aspects/dimensions
 - scope
- Interoperability needs increase non-linearly w.r.t. operational environment scope
- Interoperability for operations requires common terminology and semantics
- Scope of interoperability drives the scope of what needs to be common

Environment - Commonality



- 'Commonality' needs increase non-linearly w.r.t. operational environment scope
 - Developmental ontologies could be used to facilitate design for initial operational scope
 - Maintenance ontologies could be used to facilitate dynamic provisioning in larger networked operational scope





- Ontologies facilitate aspects of 'commonality' and interoperability
- Value of solutions that facilitate interoperability dependent on scope/scale of operational environment.
- Value models and their metrics vary with operational scope and scale
- The larger the scope of interoperability or scale, the larger the value of using ontologies.