Name	OUF Category	Problem Description	Solution	Solution Success Metrics	Synthesis
Integration of Multiple Systems from Multiple Companies	Integration	# Multiple systems and sources of knowledge in different parts of the enterprise, owned by different communities of practice. (2ORI) # Gaining time and commitment from subject matter experts to ensure completeness of the model. (2ORJ) # Different groups see different shades of meaning and application for similar terms, in different contexts. (2ORK) # Needs a unifying approach supporting local views	# Facilitation of knowledge gathering using ontology engineering methods. (2ORO) # Formal ontology notation for single ontology, while presenting views and facets of this to subject matter experts. (2ORP) # Curation of the ontology (2ORQ)	# Best use of subject matter experts¡¯ time and resources (2ORS) # Curatorship of Enterprise Semantic Architect ensures quality, consistency and completeness of the ontology (2ORT) # Collaboration in industry standardization efforts (e.g. EDM Council), via common semantics (2ORU) # Ensures that the knowledge captured at Sallie Mae is taken forward to industry-wide	Knowledge Capture
Standardization of Terms and Definitions for Financial Services		# Industry standardization of terms and definitions (2ORY) # Integration of multiple sources and feeds into disparate database structures (2ORZ) # Even a small financial firm has 50 - 100 separate systems each with its own data model (2OS0) # Tried: XML (MDDL); UML data models (ISO 20022) (2OS1) # Industry response: ¡°We need semantics (2OS2)	# Semantic (conceptual) model of terms, definitions (2OSA) # OWL/ODM metamodel with UML tool (2OSB) # Adapted for readability (2OSC) # Present draft to business SMEs for input (2OSD) # Explained format to SMEs as set theory (2OSE) # Reviewed via webcast, direct input to mode	# SMEs understood the format and contributed new knowledge on e.g. exotic structured finance (2OSH) # Answered industry call for standardization of meaning (2OSI) # Industry applications including mapping, master data models, messaging (2OSJ) # Atomic building blocks means flexibility in defining novel financial products (2OSK) # Traction from regulators, for tagging of documents at source, reporting, systemic risk oversight (2OSL)	Knowledge Capture leading to new products

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Semantic Tech in Rental Product Marketing		# Help consumers find offerings (2OSO) # Help consumers select offerings (2OSP)	# Semantic aided search (2OSV) # Semantic aided SEO (2OSW) # Rule-based product selection (2OSX)	# Current project is a pilot - stay tuned (2OSZ) # Progress in discussions with Search Engine Providers (2OT0)	Customer Satisfaction
Ontology and Rules provide rapid Natural Language Understanding		# Parsing natural language is complex (2OT7) # Identify specific text within a large set of a (2OT8) # documents that contains the same or similar (2OT9) # meaning as a given natural language description (2OTA) # of interest. (2OTB) # How do we use and grow Ontologies? (2OTC) # How do we map Natural Language to Ontology?	# Given some Natural Language text (one or more sentences or questions), parse and map the various valid constructs to semantic items in an Ontology (we call this mapping the 'meaning¡' of the text) (2OTK) # Generate (non-statistical) 'reader rules' to recognize all combinatorics of language constructs that represent the mapping as having an equivalent 'meaning map' (2OTL) # Apply the high speed 'reader rules' to a large corpus of text to identify possible meaning matches (2OTM) # Verify text identified as having the same 'meaning map' (2OTN) # Generate a report showing the information found and how it relates to the original text along with hyperlinks (2OTO)	# Changing the Dictionary has immediate effect (2OTQ) # Changing the Ontology has immediate effect (2OTR) # Ontology grows with use (2OTS) # Ontology curation is widely leveraged (2OTT) # Sifts through a large amount of text to find and return just what you are looking for without the need to read the individual files yourself. (2OTU)	

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Ontology and Rules provide Mass Customization of Vehicles		* Mass Customization of Trucks and Busses (2OU0) o Customers describe the desired vehicle by selecting the base model and a wide range of attributes (e.g. vehicle length) and features (e.g. number of exits) (2OU1) * Combinatorics of parts and assemblies (2OU2) o More than 480,000 combinations of parts, assemblies, and locations for a given vehicle ¨C Each vehicle off the assembly line can be one-ofa- kind. (2OU3) * Given an order that may never have been previously built, identify the best set of parts, assemblies and component locations for the vehicle (the Vehicle Configuration) (2OU4) * Different parts and assemblies will be available at different plants at different times. So, need to select a configuration that can be built at a plant prior to the promised delivery date. (2OU5)	* Solution Ontology (2OUA) o Ontology defined both bottom-up and top-down (2OUB) * Solution Rules Engine (2OUC) * Domain-specific UI (2OUD) o Engineers identify specific combinations in terms of both abstractions and instances (2OUE) o Rules are generated; They are not directly written by the engineers (2OUF) o Engineers work only in terms of their domain Ontology (2OUG) * Employ a fast Rules Engine (2OUH) o Over 600K rules with avg. 24 condition elements (2OUI) o Truck configured in under 10 seconds on my laptop (2OUJ) o Worlds fastest most scalable rules engine ¨C recently patented (2008) (2OUK)	# Ontology allows quick and reliable specification of new variations (2OUM) # Rules are specified in terms of the Ontology (incl. features and attributes) (2OUN) # Changes in Ontology and Changes in Rules can take effect immediately (or at designated times and plants) (2OUO) * Allows flexible change in suppliers and parts (2OUP) * New models and variations reuse previously proven engineering work (2OUQ)	Business Agility

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Semantic BI for Blogging		# Utilize data obtained from news, (2OV6) # social media, and internal sources (2OV7) # Optimize and personalize search (2OV8) # Work with open sources (2OV9) # Respond quickly to chatter (2OVA)	# NLP and Semantic index for unstructured sources (2OVF) # Custom scoring/alerts for results (2OVG) # Authoring tools to expedite content creation and analysis tasks (2OVI)	# Save time on analysis of content (2OVK) # More complete intel from text sources (2OVL) # Quicker and more precise responses to social media (2OVM) # Better and faster content creation (2OVN)	Operating Efficiency; Customer Satifaction

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Valuing the Harvest from using Ontologies		Complex information spaces (2OVS) * Need to turn these into "Layered information spaces" that are fit for purpose (2OVT) * Filter to context (2OVU)	* Enterprise Vocabulary Management (2OW0) o Flexible solutions for managing business vocabularies in support of content delivery, search, navigation, data integration and disambiguation of terms (2OW1) * Semantic-XML Message Builder Workbench (2OW2) o Enables XML-based data exchanges that are specific to the local context while remaining compliant with industry and enterprise standards (2OW3) * Data Integration (2OW4) o Federated access to disparate information sources (2OW5) * Enterprise Architecture (2OW6) o Solutions for IT governance and management (2OW7)	# Canonical data - Subject-Predicate-Object Triples (2OW9) # Identifiers - Composition Construct for Aggregations (2OWA) # Schemas are also expressed in Triples and can be queried using same query language - SPARQL (2OWB) # Evolvability¨Cschemas, vocabs and datasets can readily evolve (2OWC)	

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Architectures and Ontologies for Business Value		Fragmented architecture domains (2OWR) * Enterprise Architecture (2OWS) * Business Intelligence (2OWT) * Business Process (2OWU) * etc. (2OWV)	# Requirements, processes & services are less often captured as ontologies (2OX3) # Yet the ontology of a domain must include these viewpoints (2OX4) # Better support for other viewpoints with architecturally focused ontologies would provide increased value (2OX5) # Links between architectural an ontological tools provides a bridge between these related approaches (2OX6)	# Architectures and ontologies are mutually supportive (2OX8) # Ontological precision and the ability to federate ontologies brings value to architecture (2OX9) # Architectural tools can provide a more friendly way to express ontological information to stakeholders (2OXA) # Automating parts of systems from models and ontologies using MDA (model driven architecture) provides the much of the value without runtime overhead (2OXB) # The strategic opportunity is to bring all of this information into focus for the enterprise ¨C we are only starting to do so. (2OXC)	Business IT Effeciency
Model-driven Framework for Process Deployment, eXtreme Traceability		# Project Mgmt is Costly (2OXK) # Siloed Tools (2OXL) # Distributed Environment (2OXM) # Lack of Formal Processes (2OXN) # Lack of Traceability (2OXO)	# Integration of People, Tools and Processes (2OXQ) # Application Integration Platform & Connectors (2OXR) # Methodology and Process Modeling (2OXS) # Integrated BI (2OXT) # Model-driven Architecture (2OXU)	# Reduced Costs and Increased Visibility (2OY2) # Effective Collaboration (2OY3) # Efficient Project Tracking (2OY4) # Rapid Knowledge Access (2OY5)	

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Applying Semantics to Enterprise Systems - Proctor and Gamble Case Study		# Large consumer products company (2OY8) # Looking for ways to integrate research findings across disciplines (2OY9) # Over 10,000 researchers in nearly 100 disciplines (2OYA) # Each discipline has its own language (2OYB) # Traditional key word search not useful when searching across domains (2OYC) # Problem compounded by departure of many key researchers (retirement, re-organization, etc.) (2OYD)	# Enterprise Ontology for the R&D domain. (2OYJ) # Interviews with retiring researchers. (2OYK) # Re-use of terms from GIST upper ontology (2OYL) # Semantic Wiki built based on ontology (2OYM) # Two additional domains have been modeled (feminine care and baby care) and both reinforce the original abstractions (2OYN) # Additional domains planned for this year (2OYO	# Of the nearly 600 classes in the R&D ontology (2OYQ) * Only 2 were not derived from gist: (2OYR) o Brand (2OYS) o Invention (2OYT) # Most R&D data is findable without needing to know the specialized dialect of each subdomain. (2OYU)	Knowledge Capture; Foster Enterprise/Cross-Business Collaboration leading to new products
Ontologies and CRM for Telecoms		Customer Relationship Management (2OYZ) * Massive scale (2OZ0) * Inferencing requirements (2OZ1) * Structured and unstructured data (2OZ2) * Past, present and future views (2OZ3)	Built a "Guided Interaction Advisor" (2OZ9) * Pre-built ontology and rule set (2OZA)	# Eliminates system and agent diagnosis time (2OZC) # Provides consistent and efficient call handling (2OZD) # Increases agent and customer satisfaction (2OZE) # Anticipated benefits based on 100K actual accounts assessment: (2OZF) * AHT reduction of 10-15 (2OZG)	Operating Efficiency; Customer Satifaction