The Model-Driven, Service-Oriented Enterprise

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The Changing Business Landscape

• The marketplace is global and evolving
• Business transformations occur with increasing frequency (re-engineering, acquisitions, divestitures)
• Business functions may be outsourced or operate in a remote country
• Increased concerns about government regulation
• Business changes must be deployed throughout the enterprise quickly and efficiently
• The enterprise must be event-driven for optimal performance
Continuous enterprise transformation is essential

• Model Driven Architecture
• Service Oriented Architecture
• Architecture Driven Modernization
• Enterprise-Scale Transformation
• Enterprise Modeling
• Status
OMG Model Driven Architecture (MDA)

Technology Independent Applications

- Platform Independent Model
- Platform Specific Model
- Executable Code

- MOF
  Specify Languages
- UML
  Specify Applications
- QVT
  Specify Transformations

Transformation

- Code Generation

Technology Independent Applications
Service Oriented Architecture (SOA)

Configurable solutions

Enterprise Application

Business Processes

Services Components

- COTS
- COTS
- Custom
- COTS
- Custom

Shared Services

- Custom
- COTS
Exploit legacy system assets

- Develop a model of the application from existing artifacts
- Resolve redundancies and inconsistencies, add semantics
- Re-structure code for re-use and to reduce complexity
- Remove technology-specific design--produce a PIM
Opportunity Driven Modernization

Monolithic Application

Business Processes & Rules

Business Functions

Transition Architecture

Business Processes & Rules

Business Functions

SOA

Business Processes & Rules

Services Components

COTS
COTS
Custom
COTS
Custom
Custom

New
Organization units supply and consume services.
Enterprise-Scale Transformation

Enterprise optimization is more than process improvement

For example
- Positioning in the marketplace
- Economies of scale
- Organization structure and responsibilities
- Global locations and diversity
- Flexible allocation of resources
- Product production and costs
- Accountability and regulatory compliance
Components of Enterprise Modeling

Enterprise Model

- Strategic Plan
- Value Chain
- Business Cycles
- Financial Plan
- Motivation
- Locations
- Competencies
- Resources
- Organization
- Processes
- Rules
- Vocabulary

Current Work
Potential Development
Business Motivation Model

- Organization Unit
  - Means
    - Mission
    - Strategy
    - Tactic
    - Guidance: Policies & Rules
  - Ends
    - Vision
    - Goal
    - Objective
  - Influencers
    - Internal
    - External
  - Assessment
    - Strengths
    - Weaknesses
    - Opportunities
    - Threats
  - Impact Value
    - Risk
    - Reward
Organization Structure Metamodel

- Organization unit
- Position
- Authority
- Responsibility
- Relationships
- Locations
- Resource ownership
- Organization rules
- Modeling and runtime
Business Process Definition Metamodel (BPDM)

- **BPDM Model**
- **Proprietary Model**
- **BPMN Model**
- **BPEL Model**
- **XPDL Model**

Transformation:

- From **BPDM Model** to **Proprietary Model**
- From **BPDM Model** to **BPEL Model**
- From **BPDM Model** to **XPDL Model**
- From **BPDM Model** to **BPMN Model**

Each transformation indicates a process or method of converting one model into another.
Rule: It is obligatory that each driver of a rental is a qualified driver.

- Declarative expression of intent
- Provides for levels of enforcement
- Model represents concepts independent of business vocabulary
- Alternative vocabularies support different communities (e.g., English, German)
- Rules expressed as structured natural language
- Actions depend on context of application
Deployment of Business Rules

Production Rules Representation one form of deployment
• MDA tools available
• Service Oriented Architectures implemented
• QVT approaching adoption
• Modernization tools available, standards in process
• Business rules standards in process
• BPM standards converging
• Organization Structure standard in process
• Business Motivation (strategic planning) model under consideration
• Moving toward multi-dimensional enterprise modeling