Organization Structure Description for the Needs of Semantic Business Process Management

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Introduction to SBPM

Here is my business process!

Business Representation

IT Representation

Wow! This is perfect – nothing left to do for me!
Business Process as Organisational Activity

- Business process - a set of related, ordered activities that contribute to the production of good(s) or the delivery of some service
  - emphasises how the work is done within an organization and by its organization members

- Organization context
  - used resources,
  - strategies,
  - enterprise structure
  - roles
  - functions
Business Process as Organisational Activity
Organisational Ontologies

- **Business Functions**
  - vocabulary for describing the hierarchy of different functions like, Marketing, Finance, Human Resources

- **Business Roles**
  - representing roles in the organisation like, Designer, Process Modeller, Manager

- **Organizational Structure and Organisational Units Ontologies**
  - presenting detailed view on the organisational structure

- **Process Resources**
  - describing resources (physical or not) that are required for carrying out processes

- **Enterprise Strategy**
  - strategy, targeted markets, beneficiaries of the company and external aspects that influence the processes carried out in a company

- **Modelling Guidelines**
  - used to describe policies and rules that should be taken into account during process modelling
Organisational Ontologies (2)

Organizational ontology layer

- UPO
- Business Roles Ontology
- Organizational Structure Ontology
- Business Functions Ontology
- Enterprise Strategy Ontology
- Modelling Guidelines Ontology
- Organizational Units Ontology
- Business Resources Ontology

Imports
Organisational Units Ontology

- Marketing Dept.
- Finance Dept.
- HR Dept.
- Management Dept.
- R&D Dept.
- Procurement Dept.
- Administration Dept.
- Facilities / Inventory Dept.
- Customer Service Dept.
- Permanent Organisational Unit
- Temporary Organisational Unit
- Project Unit
- Team / Task Unit
- Committee Unit
- International Affairs Dept.
- Sales Dept.
- Public Relations Dept.
- Production / Operational Dept.
- Logistics Dept.
Business Functions Ontology
Business Roles Ontology

http://www.ip-super.org/ontologies/BRO/20070801#

- BusinessRole
  - ExternalRole
    - BusinessPartnerRole
    - IntermediaryRole
      - FinancialBrokerRole
      - InfomediaryRole
      - ProcurerRole
      - SupplierRole
    - BuyerRole
    - CompetitorRole
    - CustomerRole
    - ManufacturerRole
    - SellerRole
      - RetailerRole
      - WholesalerRole
  - InternalRole
    - hasType
      - BusinessRelationshipRole
      - CustomerServiceRole
      - MarketingAndSalesRole
      - OrganizationalAndAdministeringRole
        - ResourceAdministeringRole
          - HRMRole
        - ProductionAndOperationRole
          - TechnologicalAndTechnicalRole
          - ProductManagementAndMerchandisingRole
        - SupplementalRole
        - InternalRoleType
          - isTypeOf
            - ManagerialRoleType
            - OperationalRoleType
            - SupervisoryRoleType
Example

instance SupplyDistributingRole memberOf bro#SupplymentalRole
instance DeliveryMan memberOf oso#OrganizationalPosition
  playsRole hasValue {SupplyDistributingRole}
  assignedTo hasValue {ouo#LogisticsDepartment}
instance MrC memberOf oso#Person
  worksAs hasValue {DeliveryMan}

instance NotificationOfDemand memberOf sbpmn#ManualTask
  ... hasPerformer hasValue MrsA
  ...

instance PaperReservation memberOf sbpmn#ManualTask
  ... hasPerformer hasValue MrB
  ...

instance PaperDelivery memberOf sbpmn#ManualTask
  ... hasPerformer hasValue MrC
  ...

Notification of demand  Paper reservation  Paper delivery
Conclusions and Future Work

- Categorization of process models and fragments
- Clear and informed assignment of roles, tasks, and responsibilities
- Supported by automated processing and reasoning
- New possibilities for querying the process space before or after process execution
  - who is responsible for what? Who is doing what? what are the roles/functions associated with specific tasks?
  - which organizational units are responsible for carrying out given functions?
  - which organizational units are participating in a given process?
  - which processes will be affected by changes in the organisation?

- Future work will be devoted to
  - Aligning the ontologies with the foundational ontology in SUPER (UPO)
  - Integrating the ontologies with the Business Process Analysis layer in SUPER (COBRA, EVO)
Thanks!