Semtation GmbH

Semantic BPM - Microsoft Visio based Semantic BPM tool **SemTalk**

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Agenda

- Demonstration
- Discussion
Business Process Management in the classic organisational view (before IT became relevant)

- **Process Analysis**
  „What didn´t work and can be done better?“

- **Process Execution**
  „Let´s see how it works.“

- **Process Modeling**
  „How should this work?“
Semantic Business Process Management Lifecycle

Based on: Semiconductor Business Process Management: A Lifecycle Based Requirements Analysis
Branimir Wetzstein, Zhilei Ma, Agata Filipowska, Monika Kaczmarek, Sami Bhiri, Silvestre Losada, Jose-Manuel Lopez-Cobo, Laurent Cicurel

taken yesterday from: sunsite.informatik.rwth-aachen.de/Publications/CEUR-WS/Vol-251/paper1.pdf

Process Analysis
• SBP Mining
• SBP Monitoring

Process Modeling
In a semantic context for Process Implementation and Execution
• Semantic Annotation
• Auto-Completion
• Process Fragments -> Reference models

Process Implementation
• SWS Discovery
• Process Composition

Process Execution
• Dynamic SWS Discovery
• SWS Invocation

Reference models
What is SemTalk?

- SemTalk extends Microsoft Visio by an integrated XML database

- Business Process Modeling with SemTalk
  - As easy to use as Visio, but supporting additional logic
  - Many modeling methods (BPMN, EPC, PROMET, Flow Chart, CSA …)
  - Import of Visio diagrams
  - HTML Generator, MS Office Export, MS Project, simulator, reporting, multilingual models
  - Easy to customize to specific needs
  - Compatible, Microsoft-based alternative

- Knowledge Modeling with Visio
  - Glossaries and ontologies following W3C‘s recommendations (OWL, „Semantic Web“)
  - Used for EAI, Portals, Knowledge Management, Product Modeling, MS-Office Documents, Data Warehouse Metadata Modeling
  - Integration with Business Process Modeling
SemTalk and Visio

- Modeling processes with SemTalk is as simple as drawing a Flow Chart with Visio:
  - Drag a shape on the drawing area, rename it and connect it. No complicated dialogs at all.
  - SemTalk maintains consistency in the background:
    - The same objects on multiple shapes or pages
    - Deletion and renaming
    - Use of the connector tool for every link
    - Navigation to different pages
    - IDEF Numbering of process steps
    - Search
  - All sophisticated features of Visio can still be used

- Modeling processes with SemTalk is even simpler than using plain Visio:
  - SemTalk optimizes Visio for Business Process Modeling:
    - Only those menu entries are visible, which are needed for this task
    - User-defined attributes are specified on objects instead of shapes
  - Model-Explorer and Property Window
Event-Driven Process Chains (EPC)

- Support for syntax and semantics of EPC
- Even casual users are empowered to use this popular notation
- A Meta Model ensures Syntactical Correctness for Visio
- Object-orientation ensures Semantic Correctness of a process diagram
- Import and consolidation of 3rd party models
- SAP R/3 reference models
- Export / Import interfaces to other well known EPC tools
Business Process Modeling Notation (BPMN)

- Support for the new standard method BPMN incl. syntax and semantic checking
- Extended by object oriented functions
- Providing an Analyst Mode and a Technical Mode
- Export / Import of BPEL, e.g. for BizTalk, Oracle, IBM, Bea, etc
- Export of the Workflow Standard XPDL 2.0
BPMN -> BPEL

```
operation = "Check"
- <variable name="bookRequestVar" messageType="HotelReservation">
- <variable name="ExceptionVar" messageType="HotelReservation">
- <variable name="CheckCreditCardRequest">
- <variable name="CheckCreditCardResponse">
- <variable name="HotelReservationRequest">
- <variable name="HotelReservationResponse">
</variables>
- <receive variable="bookRequestVar" createPortLink="TravelBookingService" port="Check_Credit_Card_Scope">
```
Process Documentation as HTML on the Intranet

- Extension of the Visio HTML Export
  - Navigation
  - Database driven Search
  - Model Explorer
  - Printable Pages

- Vector graphics with zooming capability

- Merging the output of multiple Visio files

- No additional viewer is needed
Process Documentation printed on Paper with MS Word

- Creation of printable process documentation
- ISO compatible Quality Management Handbooks
- Use of customized Word templates, free text and pictures
- Many configuration options
Project Templates for MS Project

- Define recurring projects as process models
- Faster initialization of projects
- Graphical documentation of projects providing additional information for project members
- Re-Import of planned working time and actual work time back to SemTalk
Process Optimization using Simulation

- Detection of bottle-necks and estimation of throughput times
- Optimization of resources
- Single-Step Mode used to validate processes
- Computation of processing cost of single branches for a process
- Distribution generators, Unavailability, KPIs
- Branching by attribute values or probabilities
- Programmable
  - By dialog
  - By script
- Simulation reports for Microsoft Office Excel
Specification of Dialogs & Simulation of Control Flow

- Prototypes of dialog masks (e.g. InfoPath)
- Specification of control flow
- Simulation of the indented systems together with end users
- Judgment of throughput time and cost
Reports and Listings for MS Excel

- The most important reports for process relevant questions incl. simulation are already included
- Export to MS Office Excel
- User defined reports may be defined via scripting
- A meta model driven report generator can be used to create XPATH style exports to XML or HTML or Sharepoint lists
Predefined Process Libraries speedup Modeling

- Reduction of the amount of used terms (especially verbs)
- Object oriented Process Modeling
  - Activity = Object (Noun) + Verb
  - Event = Object + State
- Established in Business Process Modeling since 1997
- Advantages:
  - More consistency within process models
  - More consistency between process models
  - Easier to translate and maintain
  - Use of external glossaries or reference models
  - Simpler to merge
Libraries of common terms for Business Objects useful not only in large projects

- Invoice or Bill?
- Application, Application for reimbursement, Application for XYZ?
- UML-style notation
- Inheritance supports consistency:
  - „Special Offer“ will be used with the same verbs as „Offer“
  - This is especially useful if the global business objects are maintained in central libraries
- Use of Ontologies borrowed from „Semantic Web“
Reuse and specialisation of Elements

- Central Libraries
- Links to external objects instead of a common database
- Replication of models similar to Lotus Notes or ActiveSync™
- Frequency of change is key for objects and processes:
  - Central models consist of higher level objects which change their meaning very slowly
  - Domain models specialize the central models
  - Central models often contain Organization Charts or Business objects
- Collaboration Platforms such as Sharepoint can support the process of model distribution
Using connected Models

- Objects originated in external documents are displayed gray in the Model-Explorer as long as they are not used.

- Drag & Drop or selection in dialogs will create a reference.

- Reports and the HTML Generator will merge external and internal objects.

- External models may be located even in a database or on the Internet.

- OWL data sources on the Semantic Web serve as external models.
Semantic Web 2001

- Structured Metadata for pages (and documents)
- World-Wide-Web of distributed data, URL, URI, RDF
  - Machine readable (e.g. Webservice)
  - Human readable
- Schema Informations (classes, "Ontologies“, RDFS, OWL) for
  - Integration
  - Search
  - Inference
- Semantic Web in the true sense was not successful but first commercial applications: WolframAlpha, Bing etc.
- In research instead there is "Corporate Semantic Web"
  - Easier to implement
  - ROI easier to detect
SemTalk: “FrontPage” for the Semantic Web

- Easy to use
- Low Cost
- Highly integrated in MS-Office
- Ontology editor
- Indexing service
- Method independent
- Static and dynamic modeling

SemTalk 2001
Sharepoint

- Structured Metadata for Documents (and pages)

- Corporate Web of distributed data, URL, URI
  - Machine readable (e.g. per Webservice)
  - Human readable

- Schema Informations (ContentTypes, Classes, „Ontologies“) for
  - Integration
  - Search
  - Inference

- Corporate (Semantic) Web with Sharepoint is a big success
  - SharePoint is the fastest-growing product in the history of Microsoft
  - Over 75 million licenses of SharePoint have been sold worldwide
  - SharePoint is listed, by Forrester, as the number 1 portal product
  - SharePoint is positioned as a leader within the Gartner Magic Quadrant for Horizontal Portals products
SemTalk: Central Process Repository in Sharepoint

- Collaboration platform for process modeling teams
- Storage of (Visio-) processes
- Meta data (such as. „process owner“)
- Meta data e. g. on a background page
- Versioning
- Views
- Roles and User-Rights
- Approval Workflows
- Linking of Subprocesses
- Attachments saved in Sharepoint libraries
Sharepoint lists as an Object Repository

- Central maintenance of common objects and term on a Sharepoint server
- All Sharepoint lists may be mapped to arbitrary SemTalk Types:
  - Org. Units
  - IT-Systems
  - Glossaries
  - …
- Propagation of changes such as renaming or new objects
- Columns are synchronised with attributes and relations of the SemTalk side
- External models or direct mapping with Export / Import or selection of single objects
- SemTalk ContentTypes and SemTalk ColumnTypes make the design of new lists faster and simpler
Documentation and Management of Sharepoint Sites

- Model based documentation and specification of Sharepoint sites

- Import of
  - Libraries
  - Lists
  - Roles and users
  - Activities and workflows
  - ContentTypes and ColumnTypes

- Generation of ContentTypes from UML class diagrams
Webparts for Sharepoint 2007

- SemTalk may run in an ActiveX Control or Sharepoint Webpart including all of ist interfaces
- Sophisticated process visualization reflecting current user’s role and rights
- Optimization of presentation style
- Integration with other Webparts in the portal
SAP Processes and Service Definitions can be imported

- Reference Models for processes supported by SAP Netweaver
- Applicable to all Process Modeling Methods supported by SemTalk
- Process oriented selection of Web services to be used in process models and BPEL
- Solution based selection of process variants and component views
- SAP Solution Composer may be downloaded free of charge from http://www.sap.com
- Replacement of the R/3 Reference Model
Basics of SemTalk

- A Visio solution consists of a set of shapes covering a certain domain: Subway, Flow Chart, EPC etc.

- In order to build a modeling tool for such a domain you might need more:
  - Database for attributes
  - Meaning of a shape. How can it be connected to other shapes? Which attributes to display. And where?
  - Typed pages and structured navigation between pages
  - Refinements and process interface definitions
  - Interfaces to other tools
  - Meta model based reporting
  - Simulation

- SemTalk = Visio + Logic
  - Meta model and data objects are embedded as XML in the Visio document
Customization and Extension of SemTalk

- Meta model of a modeling method
- Objects
- Relations
- Views and page types
- Presentation
  - How to display
  - What is allowed on a page
- For each Visio Master it can be specified, how it fits into the meta model of the modeling method
Advantages of a Meta Model based Approach

- The Meta Model can be customized and extended graphically from within SemTalk without any programming
  - Shapes, Object Types and Diagram Types (Views)
  - New solutions such as „Knowledge intensive Processes“ or „Process Modeling for E-Government“ may be created within a short timeframe
  - There are many customer specific solutions around. Most large customers have their own template and method
  - XML enables integration of data with 3rd party applications
Possible Architectures with SemTalk inside Microsoft Office System

- **Platform:**
  - DotNet program with simplified user interface using the Visio OCX
  - Alternatively: Visio with embedded SemTalk
  - Alternatively: Visio / SemTalk in an ActiveX Control or on a Website in Sharepoint, SAP's Solution Composer...

- **Data storage:**
  - XML embedded in a Visio Document
  - Alternatively: SQL Server, Multi User, some restrictions on Visio
SemTalk and ARIS™ – even as a Supplement for a Department

SemTalk:

- Easy to use -> Short learning curve
- Vector graphic based HTML of Visio
- Bi-directional interface to ARIS
- Straight forward integration into portals
- Database-free or SQL-Server Repository based Version
- Flexibility: Customizable by a meta model based architecture
- Semantic Web Technology makes it easy to create consistent reference models
- Pretty good pricing
- Full blown Simulation Engine inside
- Deep integration with MS Office Product line
  - Word, Excel, PowerPoint, Project
  - Sharepoint, BizTalk

ARIS XML

ARIS is as Trademark of IDS Scheer AG
Partner Solutions

- PROMET@work
  - BPR Project Management Templates of IMG (University of St. Gallen)
  - ITIL Reference models

- SemTalk for E-Government (Knowlogy Solutions AG)
  - Reference Models and Product Catalogues

- Integral (Integrity GmbH)
  - Product Configuration for SAP IPC

- Integrales Managementsystem (IOZ AG)
  - Business Objects in Sharepoint (Person-Process-Project-Product)
  - Risik Management.
  - Viable System Model (Malik Management Zentrum St. Gallen)

- C-ENS (ConVista AG)
  - Reference Models for SAP and Insurance

- C1-CONEXUS
  - Reference Models for Utilities

- Avantgarde GmbH
  - Reference Models for Dynamics AX

- CORAK GmbH
  - Prozesskostenrechnung
Summary

- SemTalk implements more than 15 years of experiences and user requirements in Business Process Modeling on the Visio Platform and its predecessors

- SemTalk makes Visio more valuable for Business Process Modeling

- SemTalk is pretty flexible: Multiple modeling methods can be realized easily. There are virtually as many SemTalk solutions as there are Visio templates

- SemTalk is compatible: There are interfaces to the major players included. More interfaces can be build by users

- SemTalk is innovative: Combination of knowledge based and process based approaches

- SemTalk helps to create a common understanding of end users and the IT Department

- SemTalk is in daily use by many major and medium sized corporations such as Bayer, Siemens, German Post, HP ...
Interested?

SemTalk is usually free of charge if used for writing your thesis.

If you would like to cooperate with us in your thesis, we would like to talk to you.

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Do you want to test drive SemTalk?

Please download our 30 day demo free of charge.

Or make an appointment for an online demo:

www.semtalk.com

If you do not have Visio, you may download a trial version from Microsoft's website. Please let us know if you need assistance.

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