MDE In A Sales Management System: A Case Study

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SAP, INRIA & TUD
Context of this work

- The present courseware has been elaborated in the context of the MODELPLEX European IST FP6 project (http://www.modelplex.org/).
- Co-funded by the European Commission, the MODELPLEX project involves 21 partners from 8 different countries.
- MODELPLEX aims at defining and developing a coherent infrastructure specifically for the application of MDE to the development and subsequent management of complex systems within a variety of industrial domains.
- To achieve the goal of large-scale adoption of MDE, MODELPLEX promotes the idea of a collaborative development of courseware dedicated to this domain.
- The MDE courseware provided here with the status of open-source software is produced under the EPL 1.0 license.
Outline

• Introduction

• Use Case Overview

• Model-Driven Performance Engineering for a back-end business process (work between TUD & SAP on part of the use case)

• Apply Global Model Management on Model-Driven Performance Engineering (current work between INRIA & SAP on part of the use case)

• Remaining work & challenges
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- Remaining work & challenges
A Sales Management System
MDPE for Opportunity Management

We started with Opportunity Processing
Closed Loop of Continuous Process Optimization for business processes
BPPM Decision Support
Architecture & Data Flow

Business simulations are based on different data sources:
- Historic Data (Business Process Instances from SAP Business Process Platform)
- Plan Data (e.g. Sales Planning)
- Process Models

Model Driven Development of business processes enables Model Driven Performance engineering as a competitive advantage.
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Screenshot 1: Integration between the Decision Support Workbench and SAP's NetWeaver Developer studio (NWDS)
Screenshot 2: Annotation of ProcessStep models with e.g. Business Requirements

Model Elements can be annotated with e.g. business requirements by selecting them.

Different Periods can be defined for the simulations and optimizations.

Annotation: Lead Acc/Reject in June 2009 must be processed within 3 days!
Will the Lead Acc/Reject In June 2009 be within 3 days? Just trigger a simulation out of the NWDS!

Input Models are transformed stepwise and a simulation is executed.
A business requirement is not passed: The Lead Acc/Reject in June 2009 will not be processed within the required 3 days!

The Simulation results are visualized based on input models.
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Megamodelling and Model Driven Performance Engineering

- Model Driven Performance Engineering involves numerous interrelated modelling artefacts which taking part in a long model transformation chain.
- Megamodelling enables us to systematically deal with numerous modelling artefacts involved in the Model Driven Performance Engineering Process.
Megamodelling and Model Driven Performance Engineering

**AM3 Megamodelling tool:**
- deal with the numerous modelling artefacts involved in the Model Driven Performance Engineering process
  - [http://www.eclipse.org/gmt/am3/](http://www.eclipse.org/gmt/am3/)

**ATL Model-to-Model Transformation tool:**
- implement most of the transformations from the MDPE transformation chain
  - [http://www.eclipse.org/m2m/atl/](http://www.eclipse.org/m2m/atl/)

**AMW Model Weaving tool:**
- define, represent and handle traceability models and annotation models
Usage example for the megamodel: Tracing

- The megamodel enables us to navigate from models in our transformation chain to its related trace models.
- This navigation is required to trace performance analysis results back to the original development models.
Usage example for the megamodel: Administration Tool

- The megamodel is the underlying data source for the MDPE Administration tool
- The MDPE Administration tool is required to use MDPE as extension for a number of modelling tools and together with a number of different simulation tools.

![Configuration and Visualization Interface](image_url)
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Remaining Work and Challenges

- Applying MDPE for the more complex xWURST scenario (Composite Application on top of a back-end process such as Opportunity Management)
- Dealing with uncertainties in the input data of MDPE
- Integration of the Model Driven Performance Engineering Workbench in a general V&V Workbench
- Experimenting with a number of different simulation engines
- Gain customer feedback on automatically generated business simulations
- Model Driven Performance Engineering as a Service?
- Improvements of the current user interface