Using BPMN-Q to show violation of execution ordering compliance rules

Business Process Technology Seminar 2008

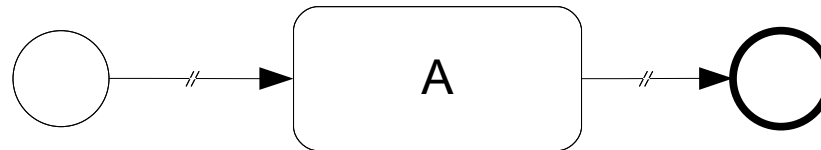Manuel Blechschmidt

Overview

- The problem domain
    - Business Processes in companies
    - Compliance standards like Basel II or ISO 9000
- Needs for compliance checking
- Example
- The enhancement
    - Automated derivation of Anti-Patterns
    - Formalization of derivation

Problem Domain

- Big companies have 1000s of documented business processes
- They want to follow standards because
    - they are forced by law
    - the standards make them more efficient
- The standards are written in prose and have 100s of pages
- Somebody has to read it, understand it and check all business processes manually if they are compliant
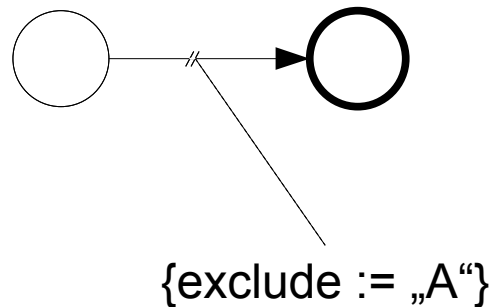- This sucks!

Needs for compliance checking

- Create language to run queries against processes
  - done. Solution: BPMN-Q by Ahmed Awad
- Use query language to check for different properties
  - Create a pattern which expresses your constraint
  - Create an anti-pattern which searches for counter examples

Example

- Every full execution of the process has to contain activity A

- Run this query against the process model and try to find at least one match

- Now we have to check if there are any counter examples

- Derive Anti-Pattern from query

{exclude := „A"}

- Execute anti pattern against process and hope that it won't find matches

- Anti-Patterns have to be derivate manually
- Challenge: How to do this automatically?

Possible solution

- Derive anti patterns for atomic BPMN-Q elements
- Use induction to generalize the anti patterns for any BPMN-Q query
- Formalize these derivations
- optional proof the derivation

Questions?