Event-driven Process-centric Performance Prediction via Simulation

David Redlich & Wasif Gilani

SAP Research Belfast
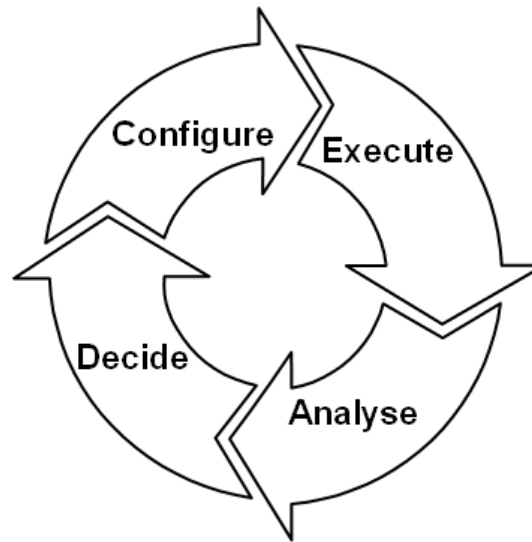
Agenda

1. Motivation
2. Concept: Event-Driven Performance Prediction via Simulation
3. Implementation
4. Conclusion
5. Outlook

Motivation (1)
Offline Business Process Performance Analysis

- Decision Support for BPM

BPM Lifecycle

Motivation (II)
Business Activity Monitoring (BAM)

- ## BAM – part of EDBPM:

  - ◦ real-time or near real-time approach of monitoring bp events with a CEP engine

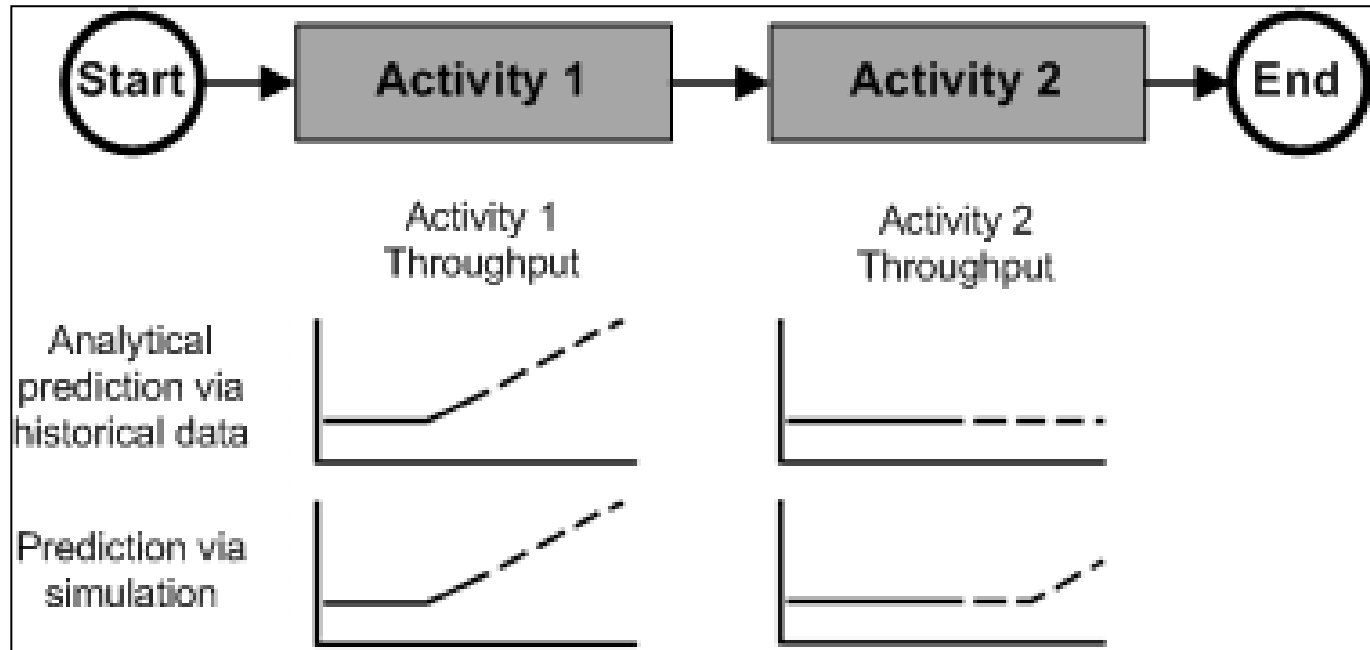 - ◦ aggregation of raw live-events into performance related parameters

- ## Input: Events

  e.g. 2011-05-26 T 10:45 CET: Activity ``Check availability'' completed, pi-id: 253

- ## Output: Performance Parameters

  e.g. activity net working time, resource utilisation, process instance occurrence, throughput
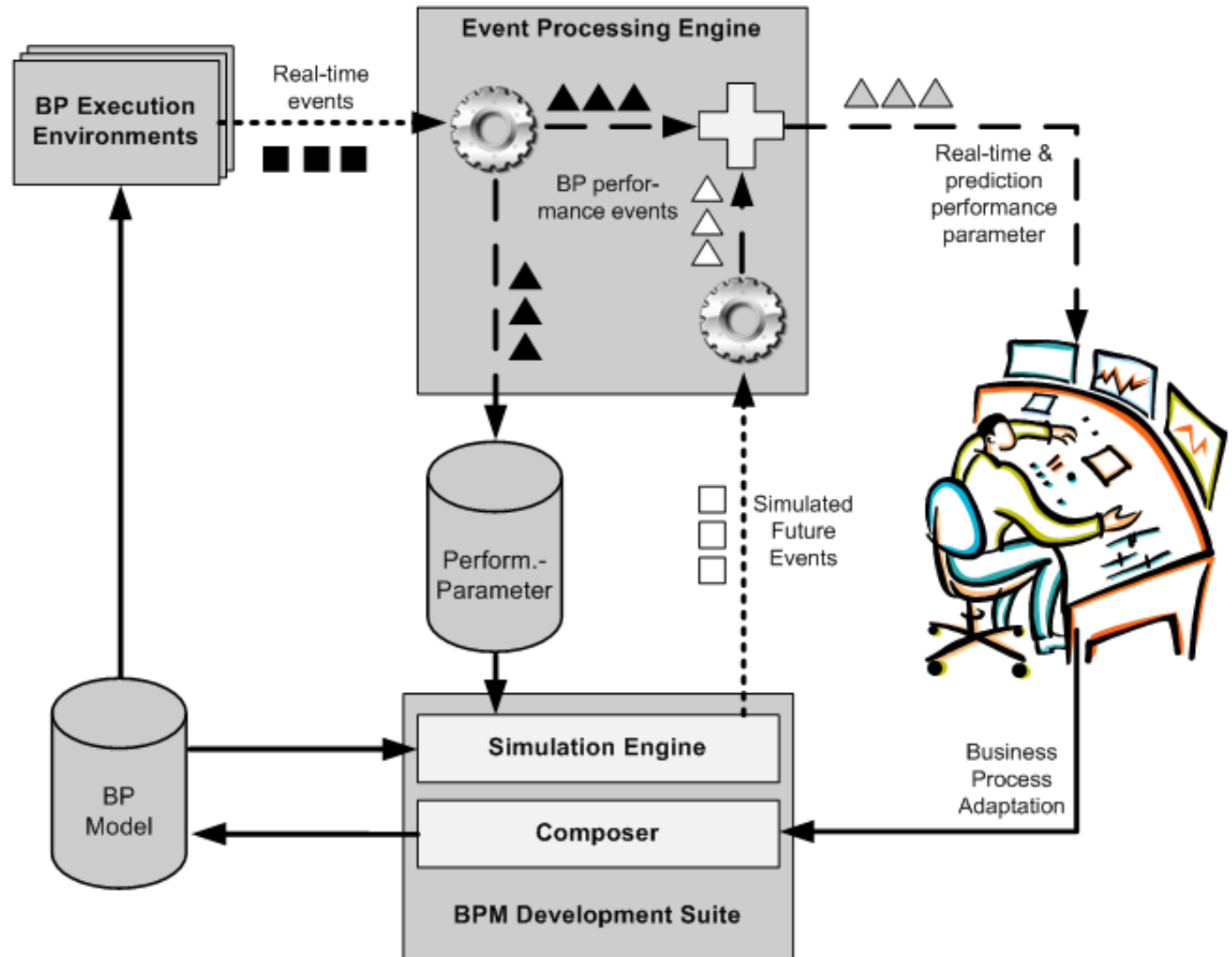
Motivation (III)
Direct Prediction vs. Prediction via Simulation
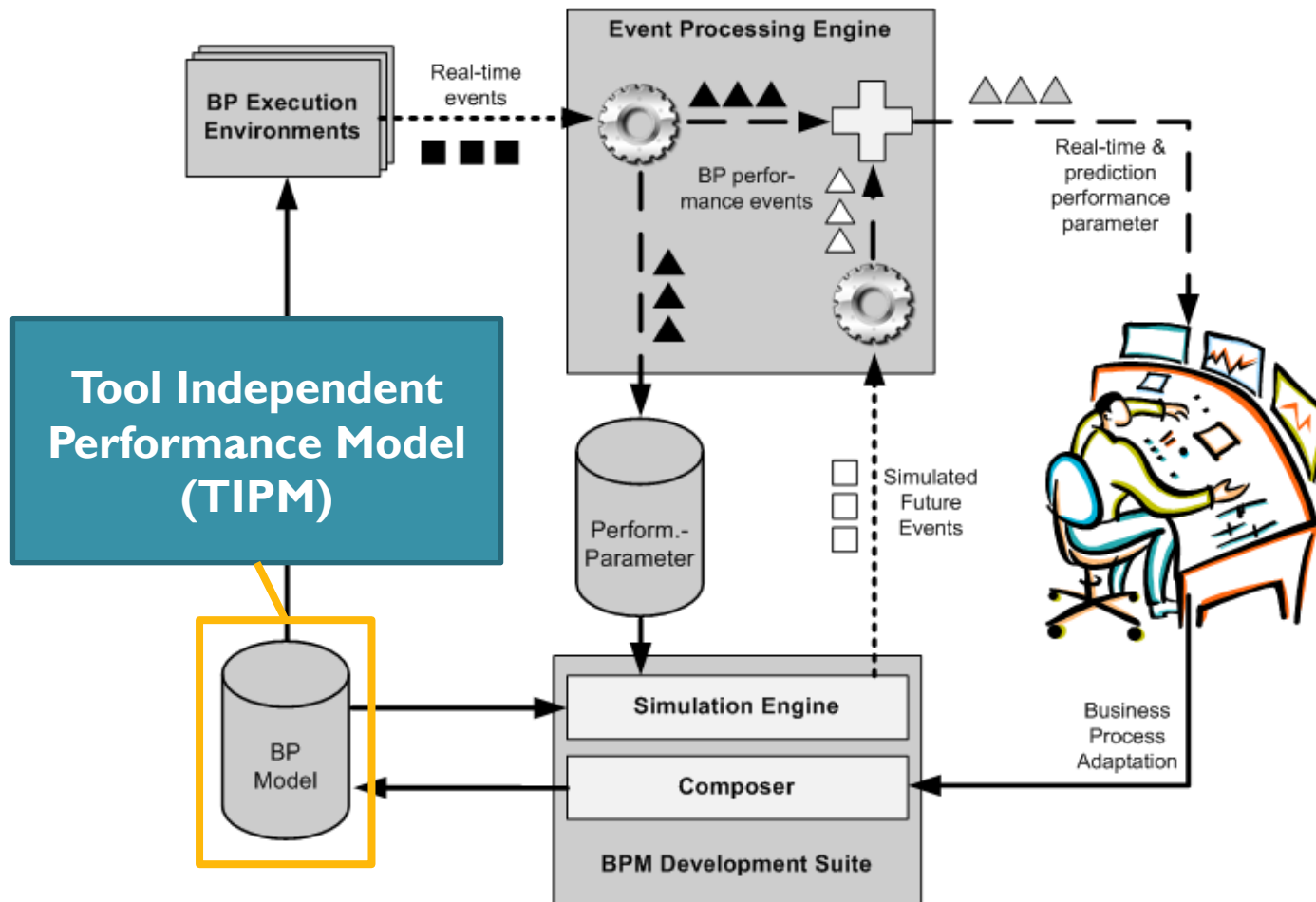

- Prediction with simulation:

  structural BP information taken into account
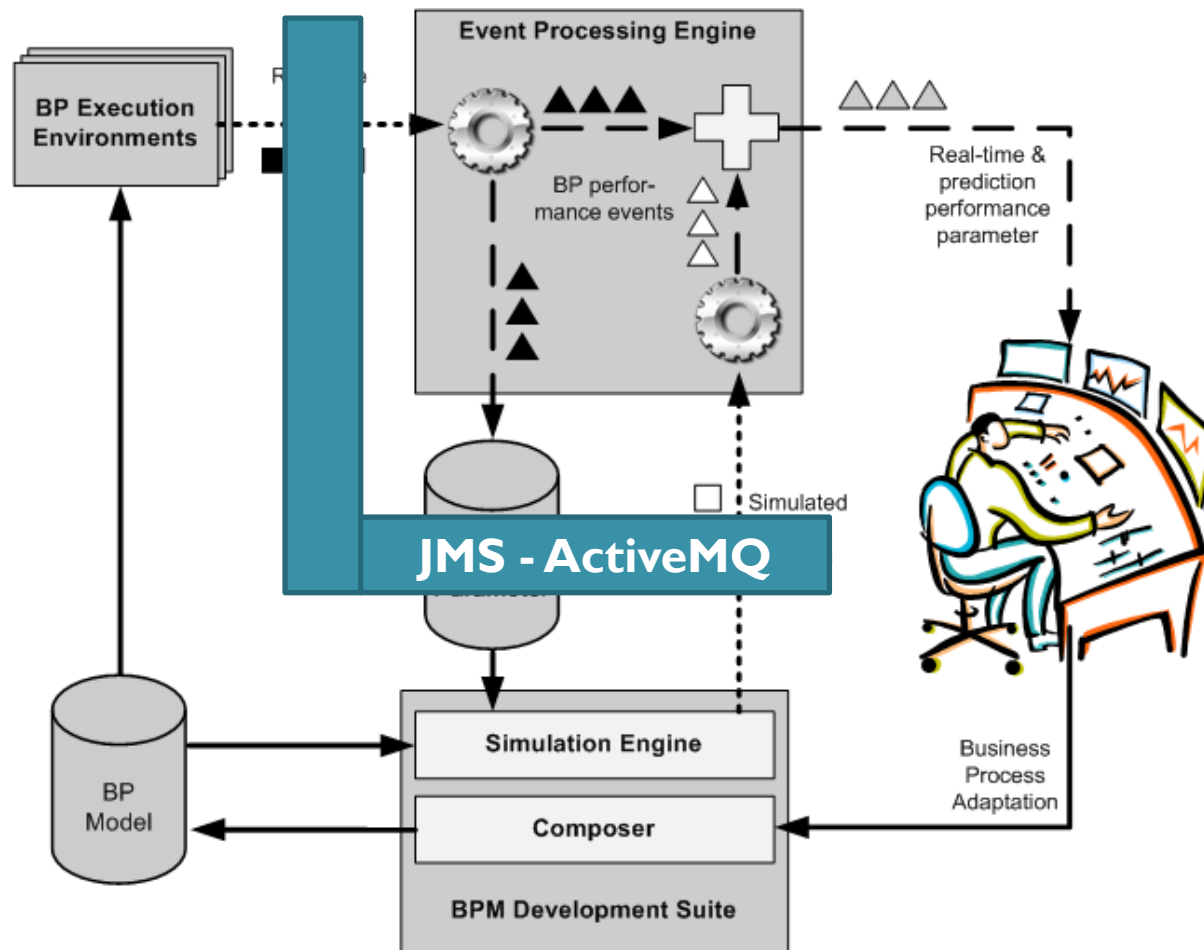   → Potentially better results

Concept of Proposed Solution
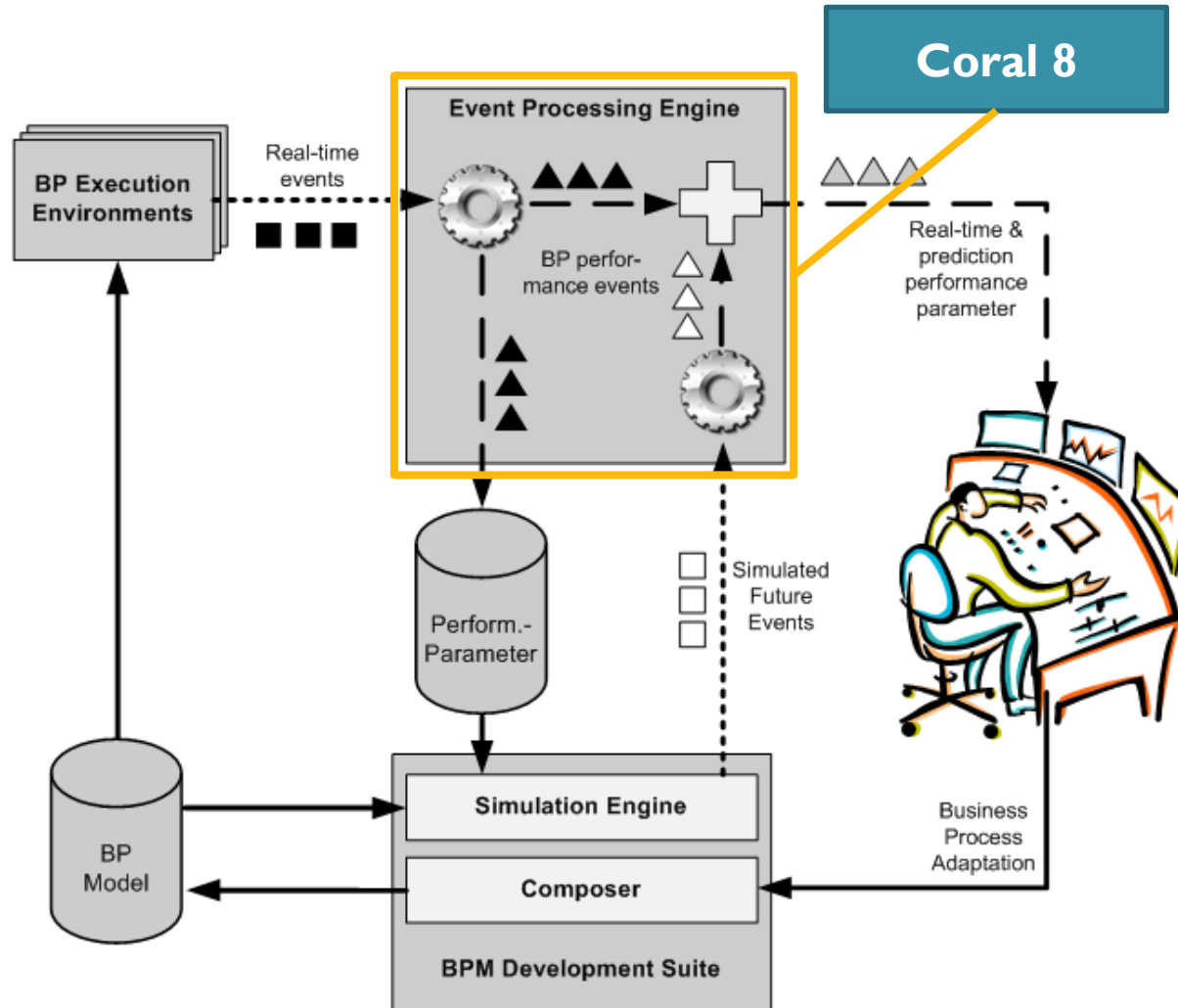
Test-bed: Implementation

Test-bed: Implementation

Test-bed: Implementation

Coral 8

Event Processing Engine

BP Execution Environments

Real-time events

BP performance events

Real-time & prediction performance parameter

Perform.-Parameter

Simulated Future Events

Simulation Engine

Composer

BPM Development Suite

BP Model

Business Process Adaptation
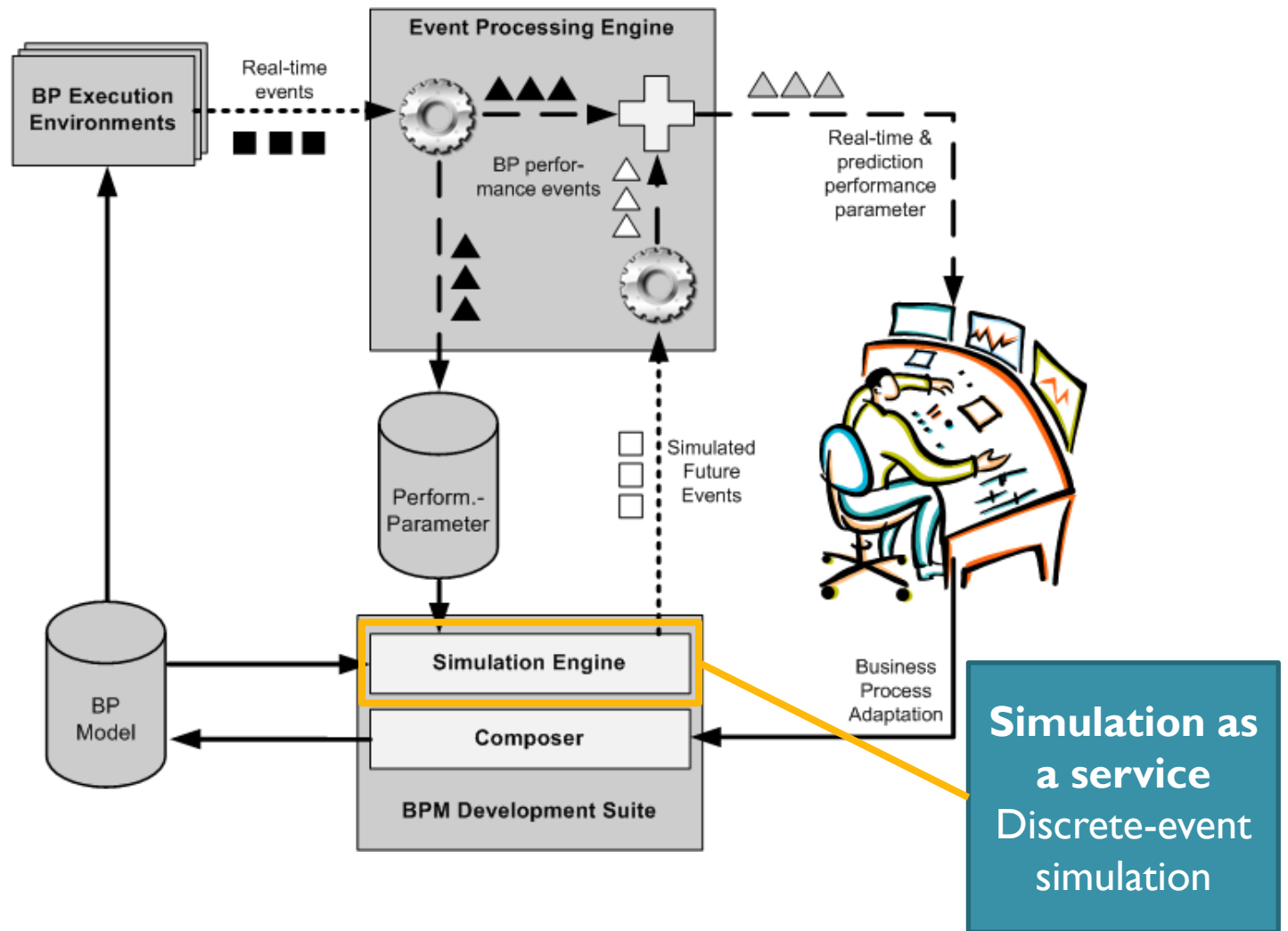
Test-bed: Implementation

Conclusion

- Solution for EDBPM use-case:

  process-centric performance prediction via simulation

- Prediction via simulation:
  - integration benefit
  - probably more accurate prediction results
  - Disadvantage: slow, not very scalable
- Test-bed implementation

Vision

- Generalising the event processing component
- Integrating Business Continuity Management – including the underlying resource infrastructure into the analysis
- Closing the loop – reduction of interaction of the business analyst
- Employment of an optimisation engine (half-automated / fully automated)

Thank you!

Email: david.redlich@sap.com