Modern Process Management with SOA, BAM und CEP

From static process models to executable workflows and monitoring on business level

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Overview SOA, BPM, BAM, Event Processing

- ARIS EPK (IDS)
- UML (OMG)
- BPMN (BPMN.org)
- XLANG (MS)
- WSFL (IBM)
- WSBPEL (Oasis)
- BPEL4People (SAP, MS)
- BPEL-J / JSR 207 (JCP)
- EAI
- WDSL (Oasis)
- SOAP (Oasis)
- JBI / JSR 208 (JCP)
- Apache Beehive
- ARIS Toolset
- Rational
- Together
- Eclipse
- JBoss, Tomcat
- BEA Weblogic
- IBM WebSphere
- Oracle
- SAP Netweaver
- ARIS PPM
- IBM Amit
- Esper
- Streambase
- Coral8
- ...
Part A:
From static ARIS business processes to executable workflows with business activity monitoring
Process Modeling

- There can be thousands of EPC per company
- Static modeling for legal, audit, … reasons
- Static and real world processes differ
- Modeled functions do not correspond to services in a SOA
Process Re-Modeling, Automation, and SOA

ARIS EPC as the basis in all departments!

- Re-modeling based on a SOA
- Implementing appropriate procedure models
  - New paradigm: "IT and the business side speak one (process) language"

Using standardized workflow languages like BPEL

For BAM and cockpits processes are the beginning and end!
Services & Legacy Systems

- Finding the appropriate service granularity
- Use of industry standards
  - Web services
  - WSDL
  - SOAP
  - UDDI
  - J2EE CA
  - Adapter Technology
  - ...

Integrating mainframe systems into modern architectures!
EPC Process After Re-modeling
BAM & Enterprise Cockpit

Analyzing business processes in real-time by adding generic BAM Sensors to the BPEL process.

Get the overview with your morning coffee!
Part B: Event Stream Processing and Complex Event Processing
“The whole picture again”
With a cloud of events

event cloud with thousands of events per sec...

...e.g. a bank

Sensor 1
Sensor 2

event patterns and complex event processing...
Co-operations with leading universities and labs: Stanford University, IBM AMIT, ...
Complex Event Processing (CEP) is an emerging technology for building and managing information systems including:

- Business Activity Monitoring
- Business Process Management
- Enterprise Application Integration
- Event-Driven Architectures
- Application Servers and Middleware
- Network and Systems Security

Discover the events flowing through all layers of the IT infrastructure

Understand information in terms of its impact on high level management and business processes

Reaction upon in real time

Source: http://www.complexevents.com
Event Stream Processing

- Software technology to
  - Monitor,
  - Analyze,
  - act upon
  Events

- Like a database turned upside-down
  - Store Queries
  - Run data through

Numerous possibilities for applications!
For example, making the computation of credit rates in an online credit website dependent (not only of personal details but also) on the actual supply and demand situation.

Source: http://www.eventstreamprocessing.com
Bringing together different monitoring types

- Classical BAM has top down view
- Technical monitoring has bottom up view
- Gap between business and technical monitoring
- Event Processing identifies events in both worlds and correlates process/functions/service calls with the related technical systems

- ARIS PPM
- ORACLE BAM
- IBM Monitor
  - IBM Tivoli
  - HP OpenView
  - BMC
  - CA
  - …
norisbank Event Processing Scenario

- Complex Event Processing allows precise correlations
  - Situation: Application or Web Server crashes
  - Problem: Which users or groups are affected or which processes

CORRELATIONS: Customer > Web Session > Web Server Instance > App Server Instance > Application Instance > Component > Affected Process Instance > Affected Process Template
The Ascent of CEP

Simple Event Processing
- BAM
- Workflow
- Intrusion Detection

Creeping CEP
- Web Services
- Smart Middleware
- Common Event Infrastructure standards
- App Servers with CEP facilities
- Some CEP in autonomic systems
- Event processing courses in universities
- CEP in BAM applications

Technology with CEP
- New Era Internet
- Many EDAs built using CEP
- Industry Standards for CEP
- Complex Event Pattern Search Engines
- CEP additions to Programming Languages

Ubiquitous CEP
- CEP contained in all event-driven systems
- General adoption of EDAs

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Thank you very much!

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