Modern Process Management with SOA, BAM und CEP

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

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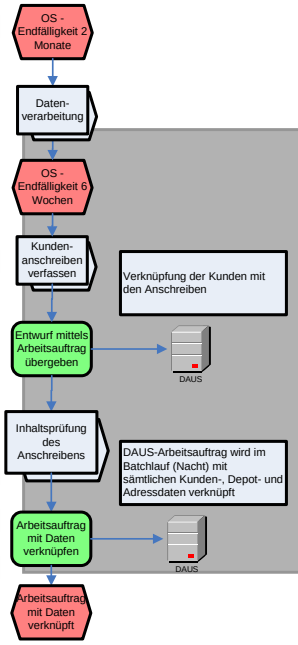
Version 1.0

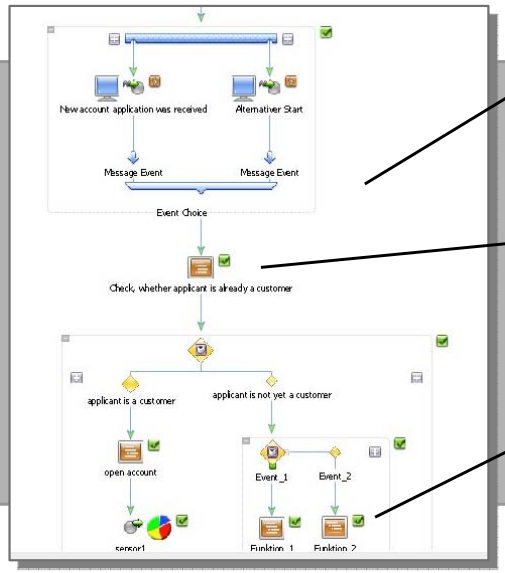
Overview SOA, BPM, BAM, Event Processing

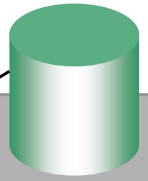
- ARIS EPK (IDS)
- UML (OMG)
- BPMN (BPMN.org)
- …

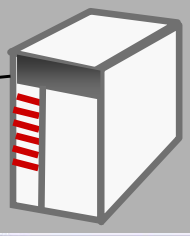
- XLANG (MS)
- WSFL (IBM)
- WSBPEL (Oasis)
- BPEL4People (SAP, MS)
- BPEL-J / JSR 207(JCP)
- …

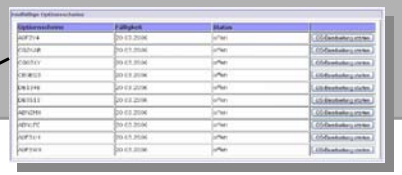
- EAI
- WDSL (Oasis)
- SOAP (Oasis)
- JBI / JSR 208 (JCP)
- Apache Beehive

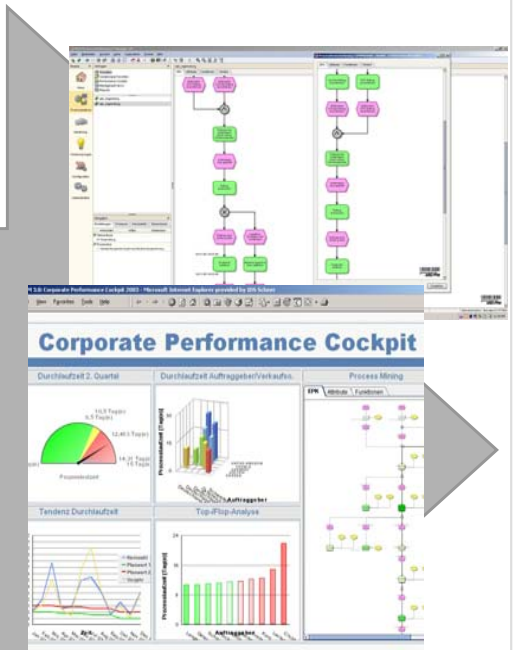


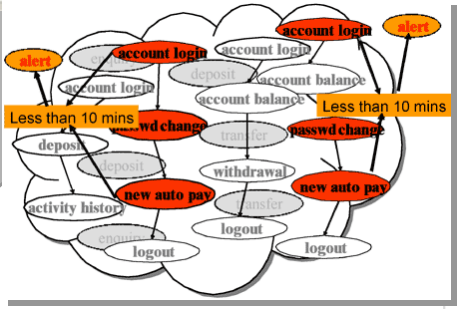












- ARIS PPM
- IBM Amit
- Esper
- Streambase
- Coral8
- …

Process Design

Process Automation "Workflow"

Integration Human Interaction

Business Activity Monitoring Complex Event Processing Event Streaming

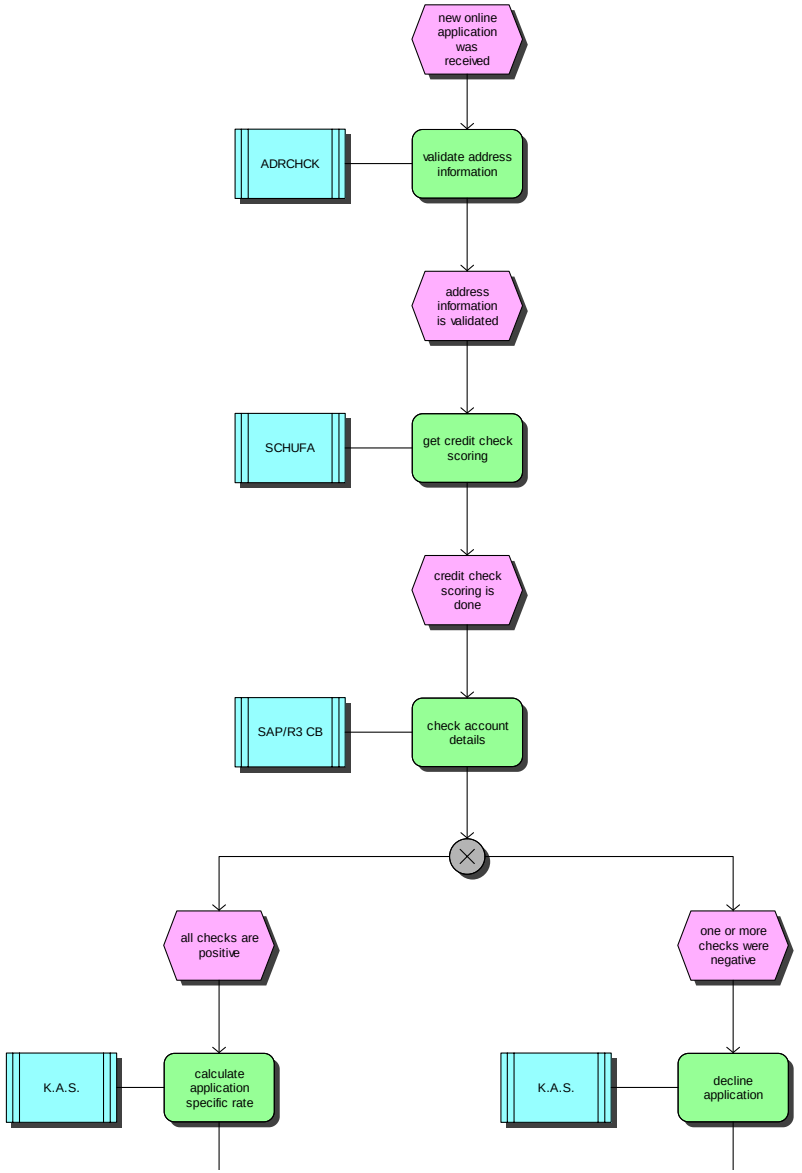
- ARIS Toolset
- Rational
- Together
- Eclipse
- …

- JBoss, Tomcat
- BEA Weblogic
- IBM WebSphere
- Oracle
- SAP Netweaver
- …

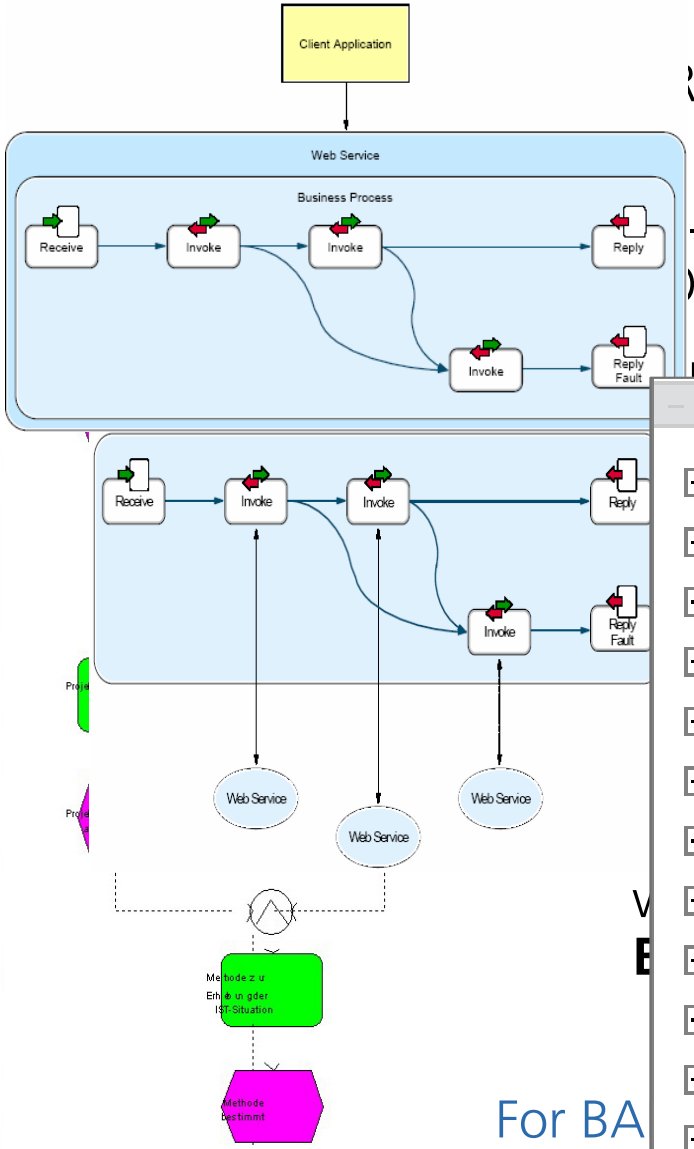
Part A:
From static ARIS business processes to executable workflows with business activity monitoring

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



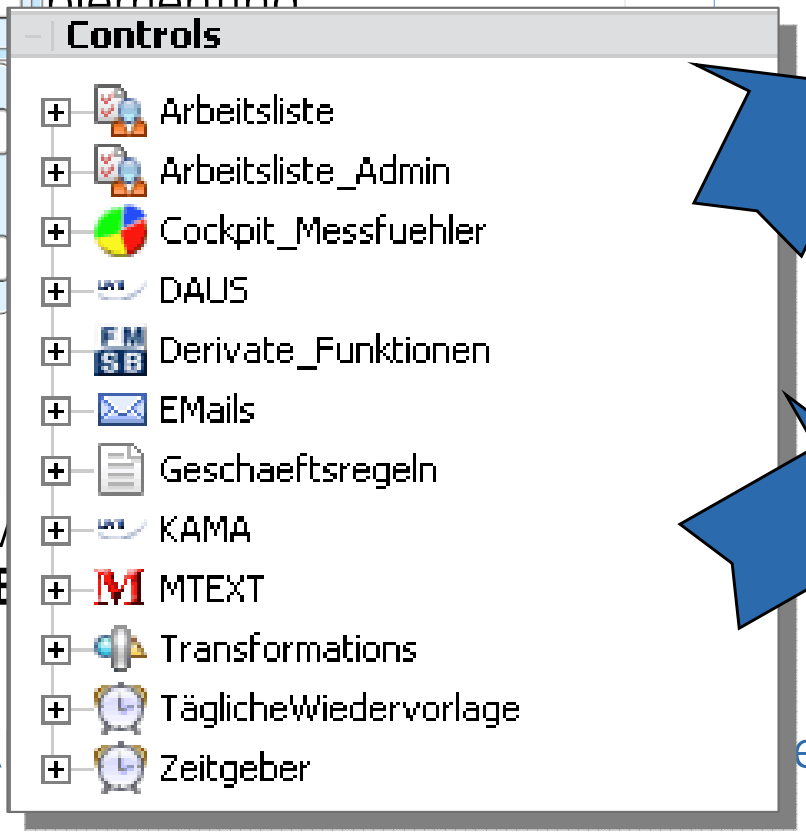
Process Re-Modeling, Automation, and SOA

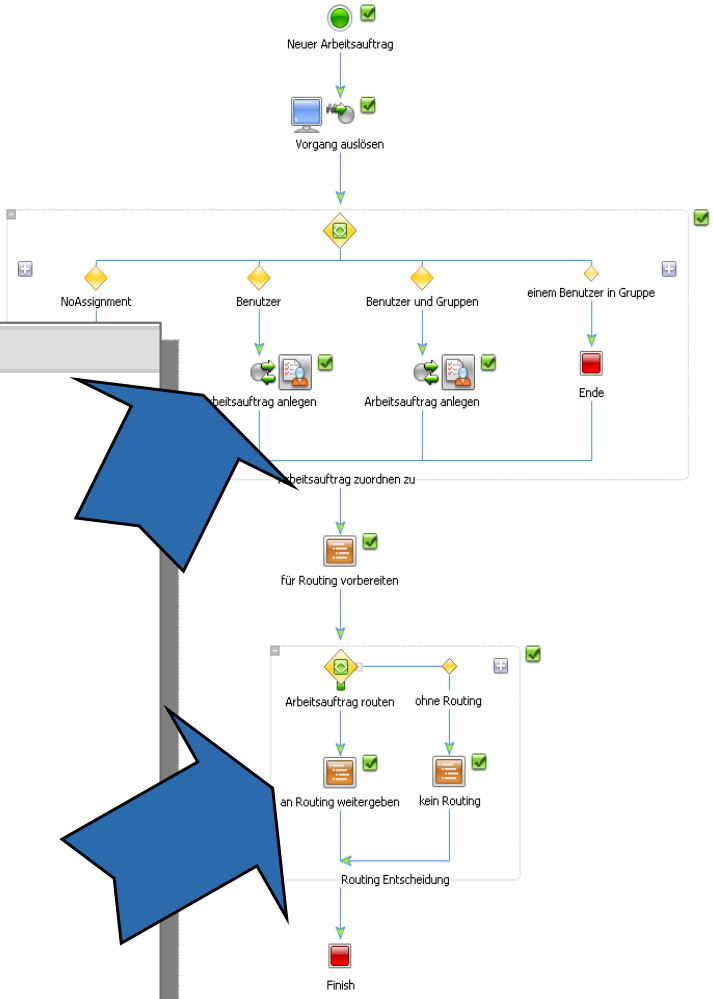


IS EPC as the basis in departments!

-modeling based on a A

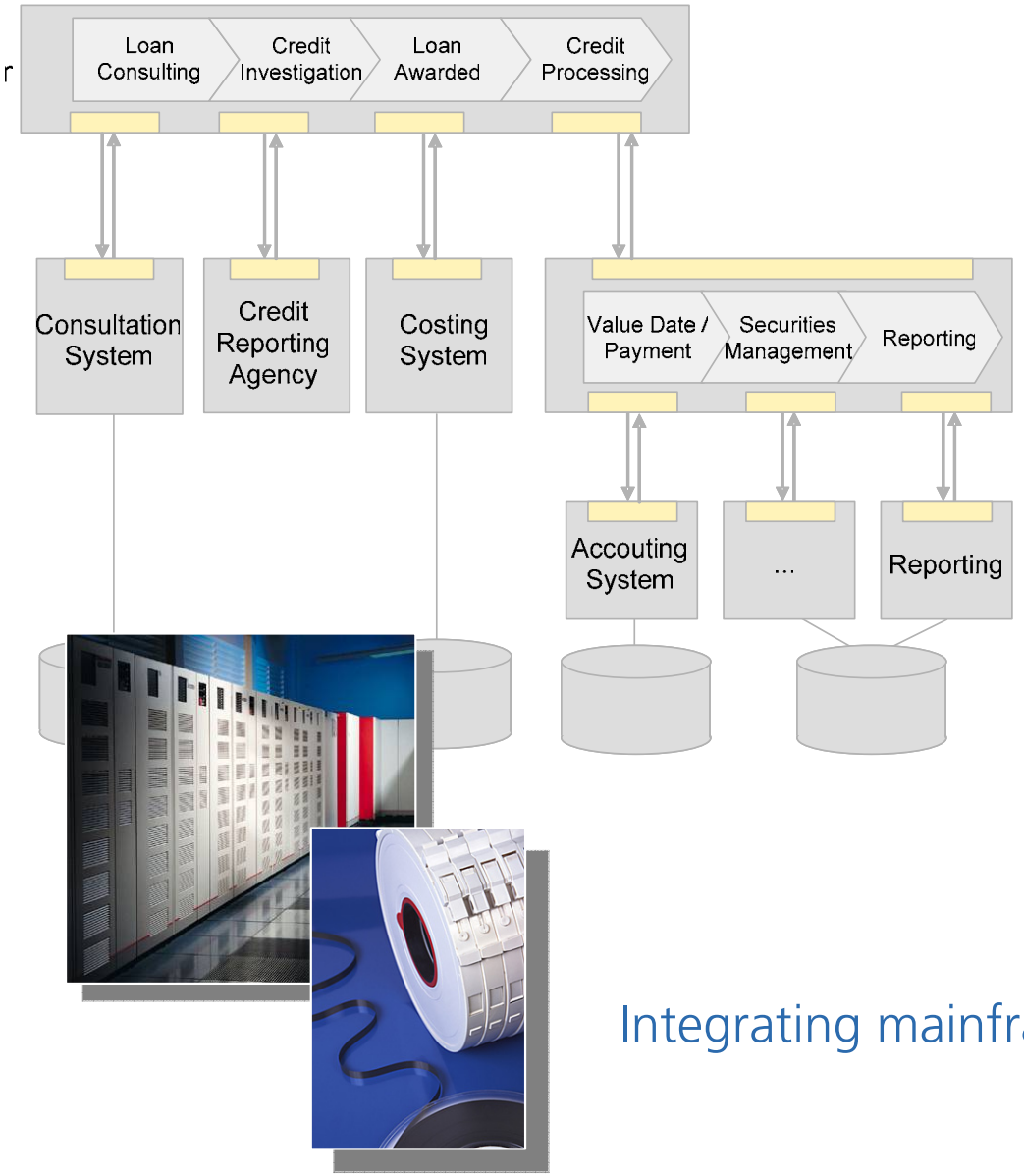
plementing





For BA eginning and end!

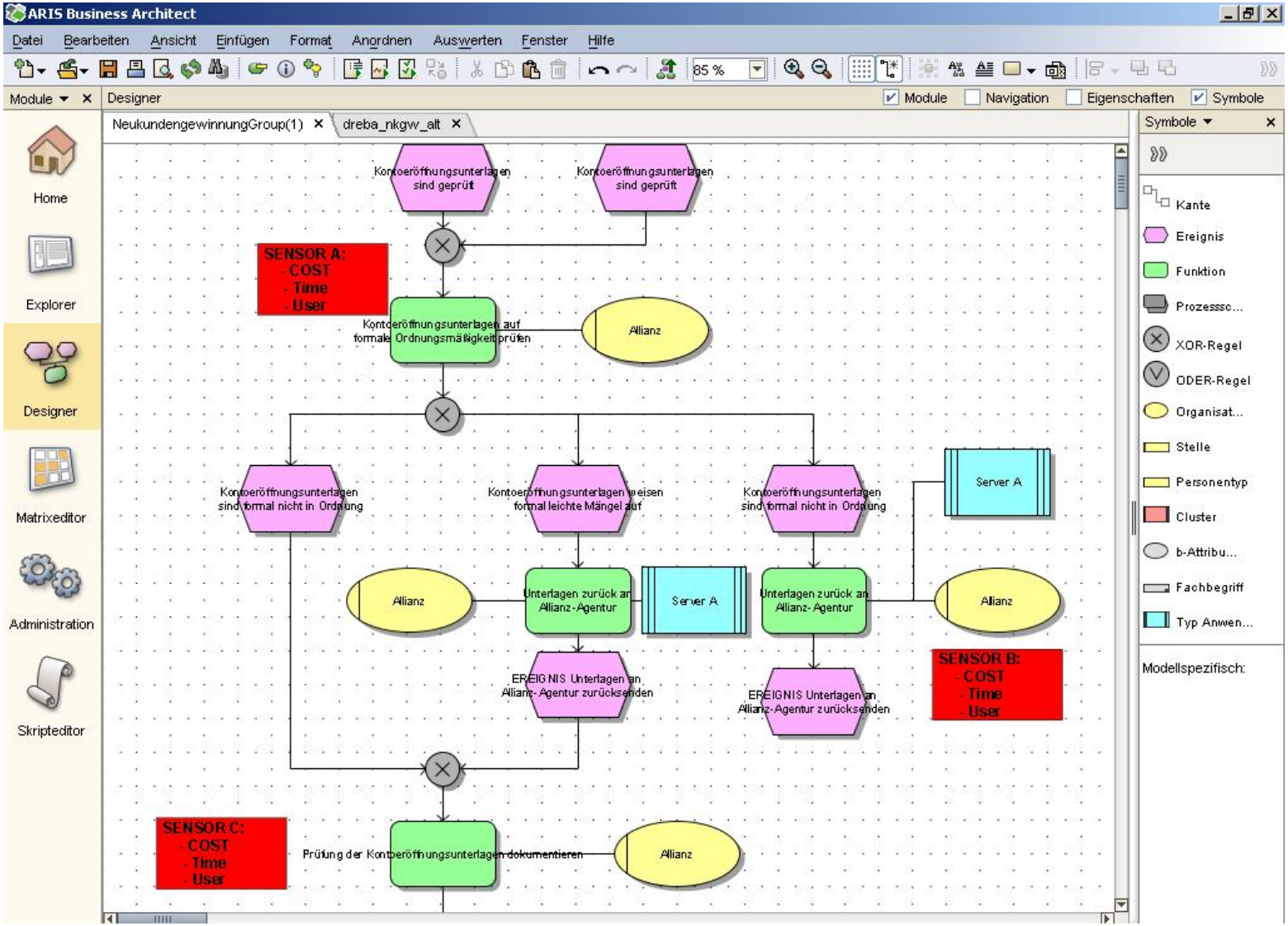
Services & Legacy Systems



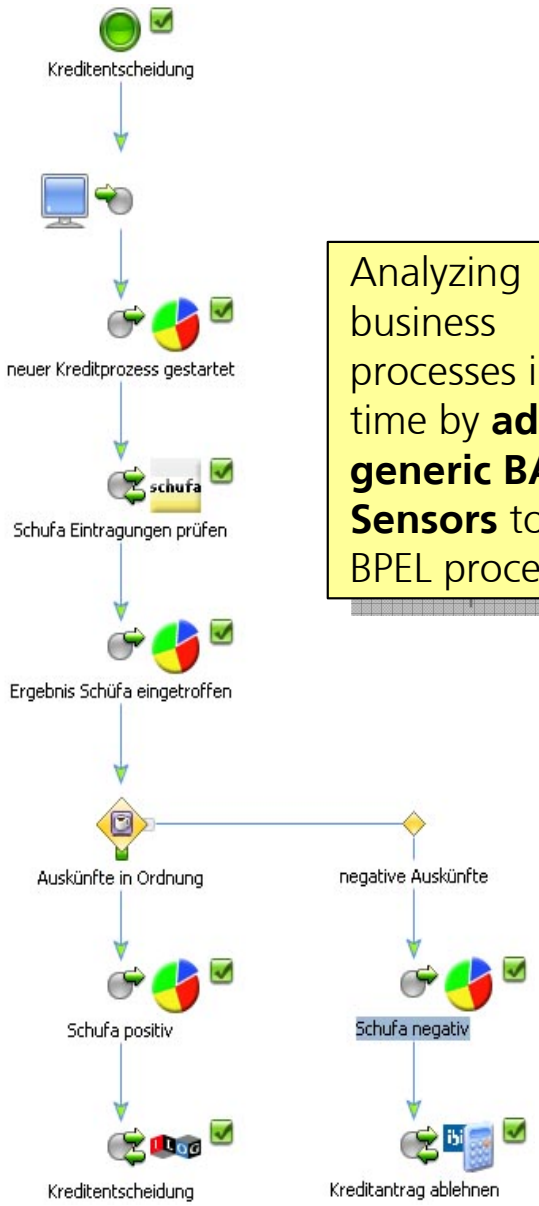
- Finding the appropriate service granularity
- Use of industry standards
  - Web services
  - WSDL
  - SOAP
  - UDDI
  - J2EE CA
  - Adapter Technology
  - …

Integrating mainframe systems into modern architectures!

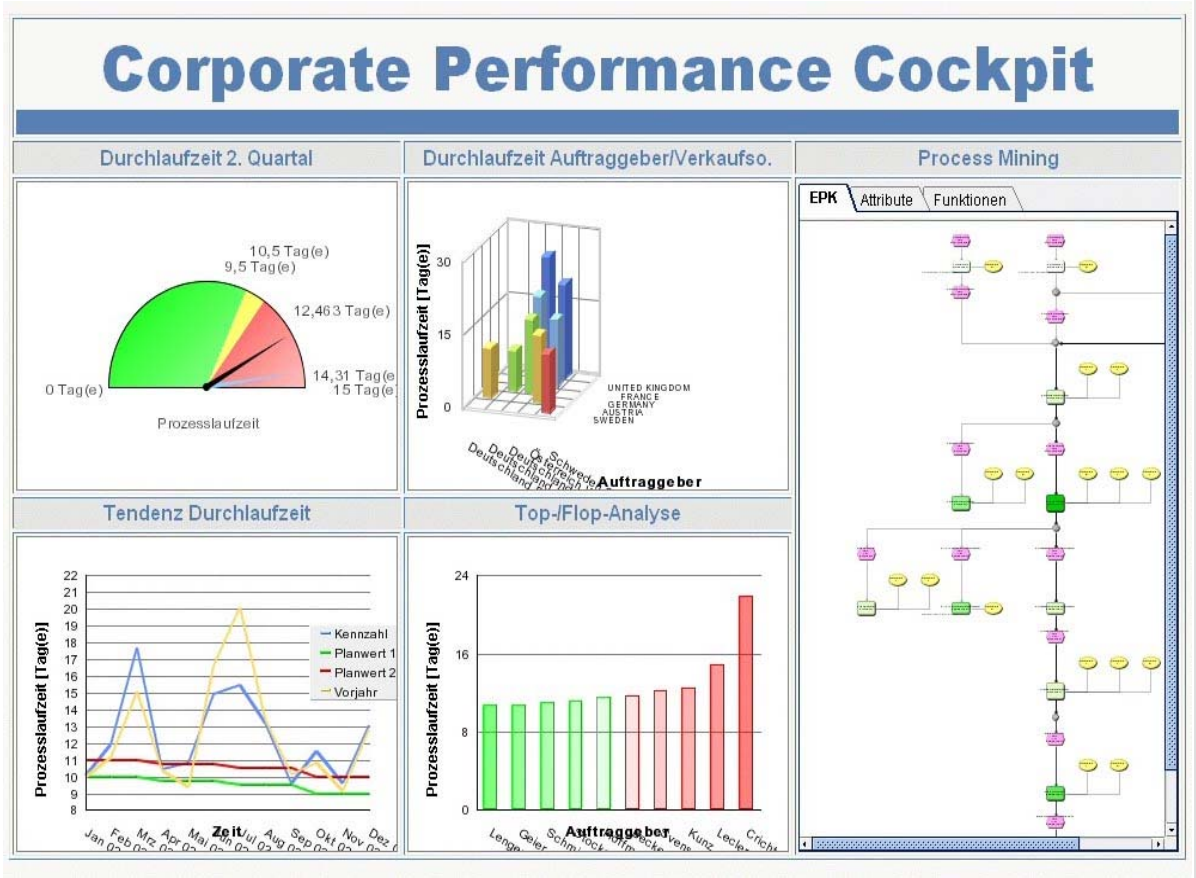
EPC Process After Re-modeling



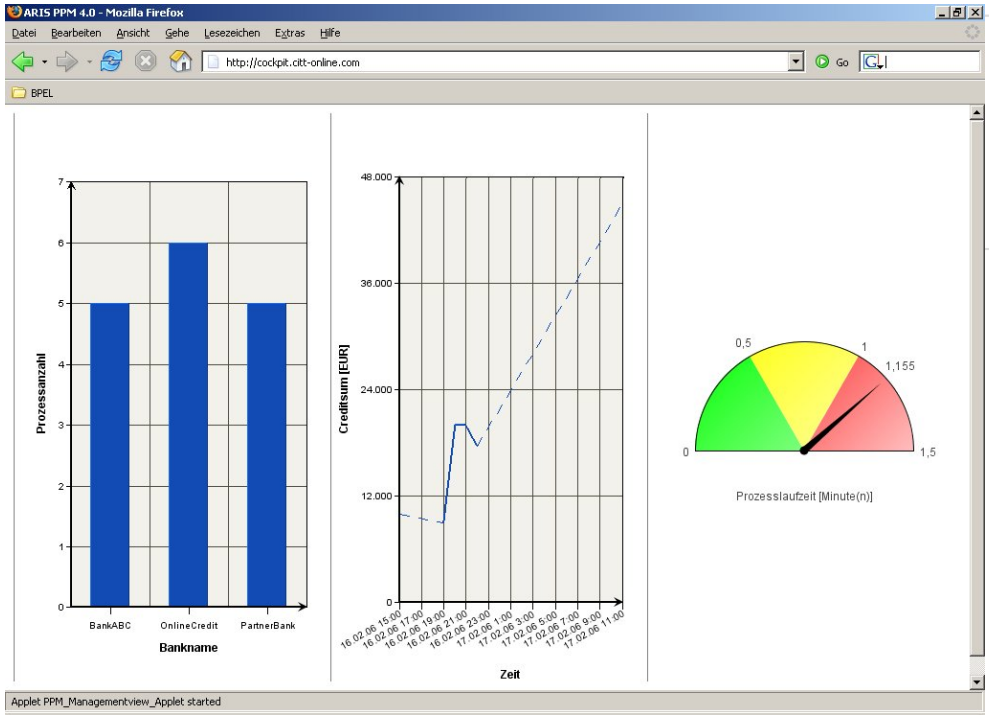
BAM & Enterprise Cockpit

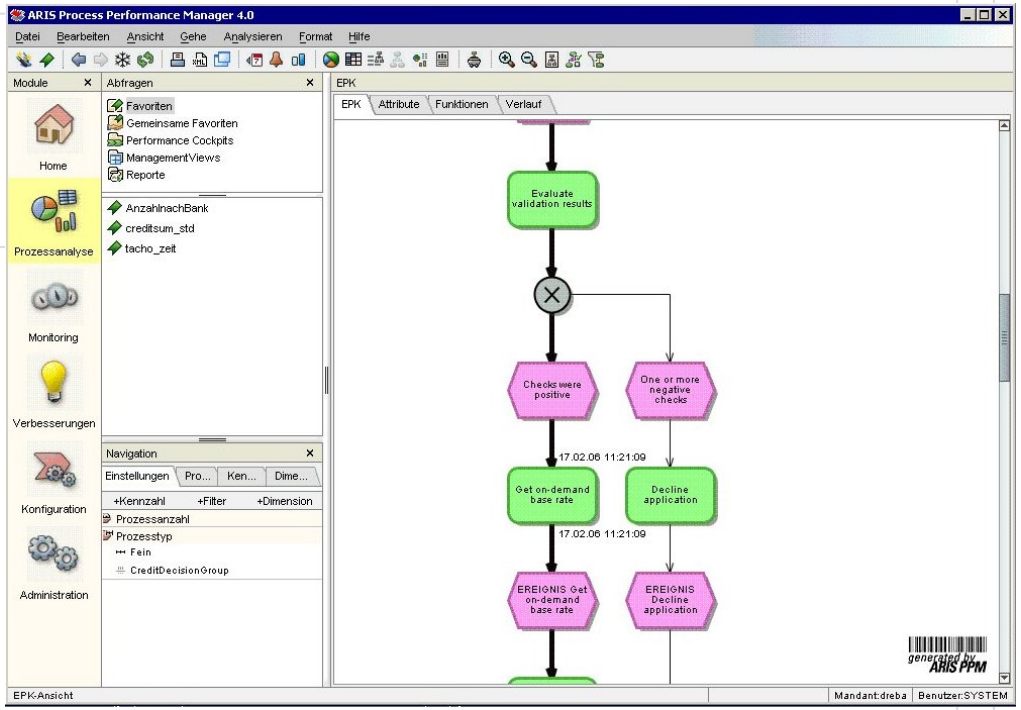


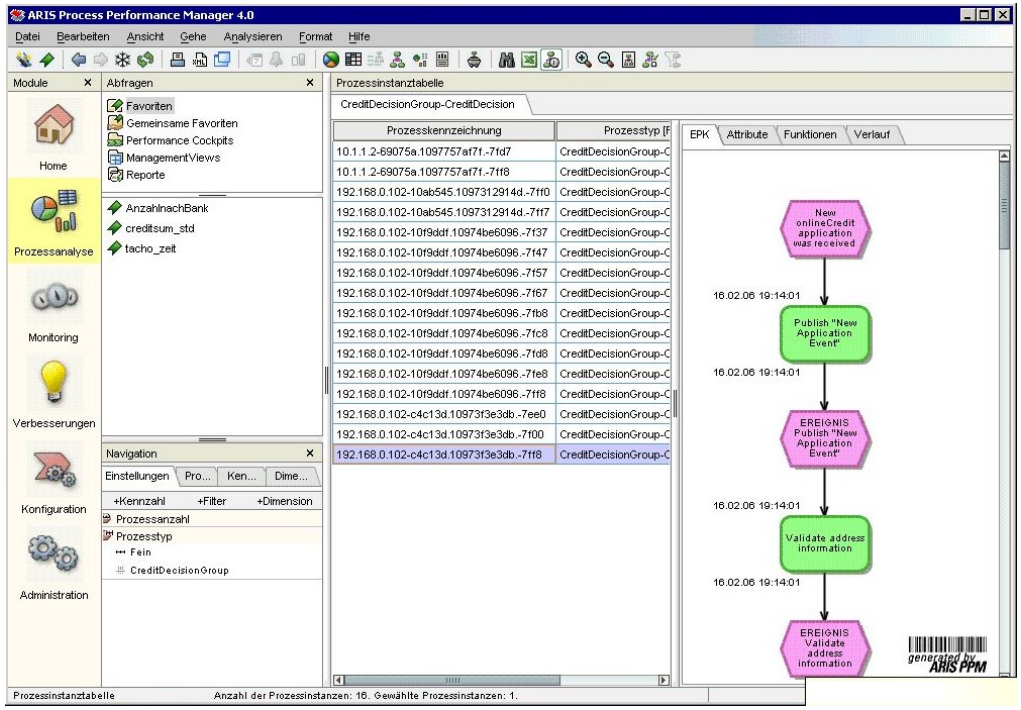
Analyzing business processes in real-time by **adding generic BAM Sensors** to the BPEL process

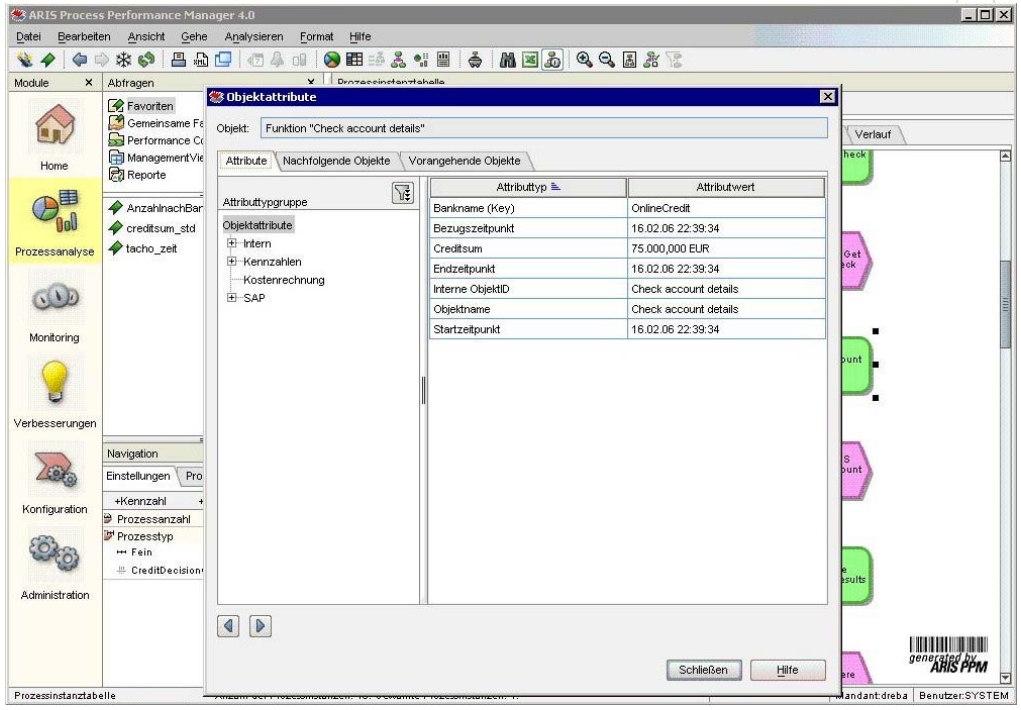


Get the overview with your morning coffee!


ARIS PPM 4.0 - Mozilla Firefox
Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe
http://cockpit.citt-online.com
BPEL
Prozessanzahl
Bankname
BankABC
OnlineCredit
PartnerBank
Creditsum [EUR]
Zeit
Prozesslaufzeit [Minute(n)]
Applet PPM_Managementview_Applet started


ARIS Process Performance Manager 4.0
Datei Bearbeiten Ansicht Gehe Analysieren Format Hilfe
Module
Abfragen
Favoriten
Gemeinsame Favoriten
Performance Cockpits
ManagementViews
Reporte
AnzahlnachBank
creditsum_std
tacho_zeit
Home
Prozessanalyse
Monitoring
Verbesserungen
Konfiguration
Administration
Navigation
Einstellungen
Prozessanzahl
Prozesstyp
Fein
CreditDecisionGroup
EPK
Attribute
Funktionen
Verlauf
Evaluate validation results
Checks were positive
One or more negative checks
17.02.06 11:21:09
Get on-demand base rate
Decline application
ERREIGNIS Get on-demand base rate
ERREIGNIS Decline application
generated by ARIS PPM
EPK-Ansicht
Mandant:dreba
Benutzer:SYSTEM

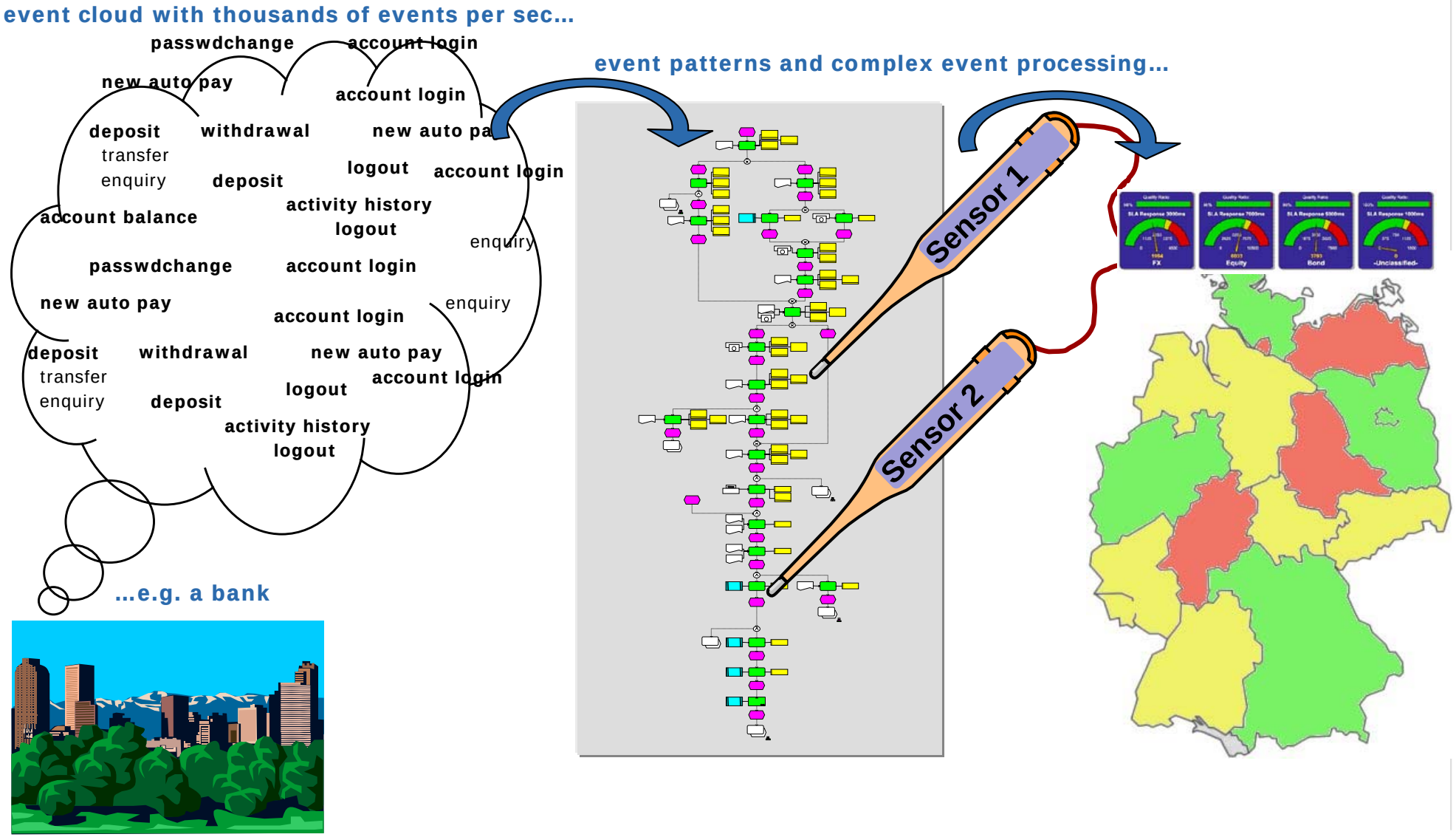

ARIS Process Performance Manager 4.0
Datei Bearbeiten Ansicht Gehe Analysieren Format Hilfe
Module
Abfragen
Prozessinstanztabelle
CreditDecisionGroup-CreditDecision
Prozesskennzeichnung
Prozesstyp
EPK
Attribute
Funktionen
Verlauf
New onlineCredit application was received
16.02.06 19:14:01
Publish "New Application Event"
EREIGNIS Publish "New Application Event"
Validate address information
EREIGNIS Validate address information
generated by ARIS PPM
Prozessinstanztabelle
Anzahl der Prozessinstanzen: 16. Gewählte Prozessinstanzen: 1.


ARIS Process Performance Manager 4.0
Datei Bearbeiten Ansicht Gehe Analysieren Format Hilfe
Objektattribute
Objekt: Funktion "Check account details"
Attribute
Nachfolgende Objekte
Vorangehende Objekte
Attributtypgruppe
Objektattribute
Intern
Kennzahlen
Kostenrechnung
SAP
Attributtyp
Attributwert
Bankname (Key) OnlineCredit
Bezugszeitpunkt 16.02.06 22:39:34
Creditsum 75.000,000 EUR
Endzeitpunkt 16.02.06 22:39:34
Interne ObjektID Check account details
Objektname Check account details
Startzeitpunkt 16.02.06 22:39:34
Schließen
Hilfe
generated by ARIS PPM
Prozessinstanztabelle
Mandant:dreba
Benutzer:SYSTEM

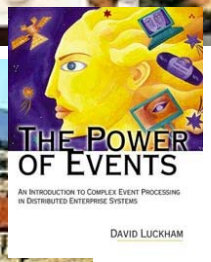
Part B:
Event Stream Processing and Complex Event Processing

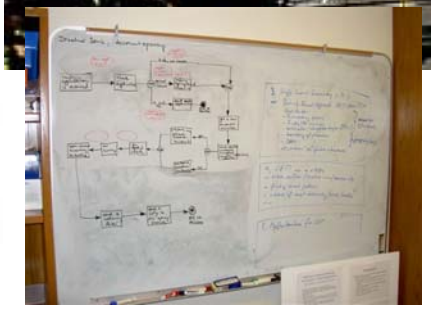
“The whole picture again”

With a cloud of events



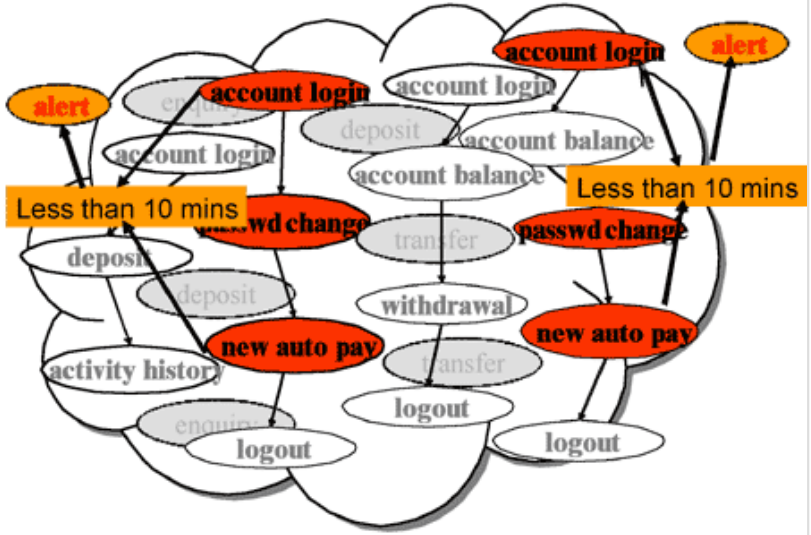
Co-operations with leading universities and labs: Stanford University, IBM AMIT, …





Complex Event Processing (CEP)

- 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

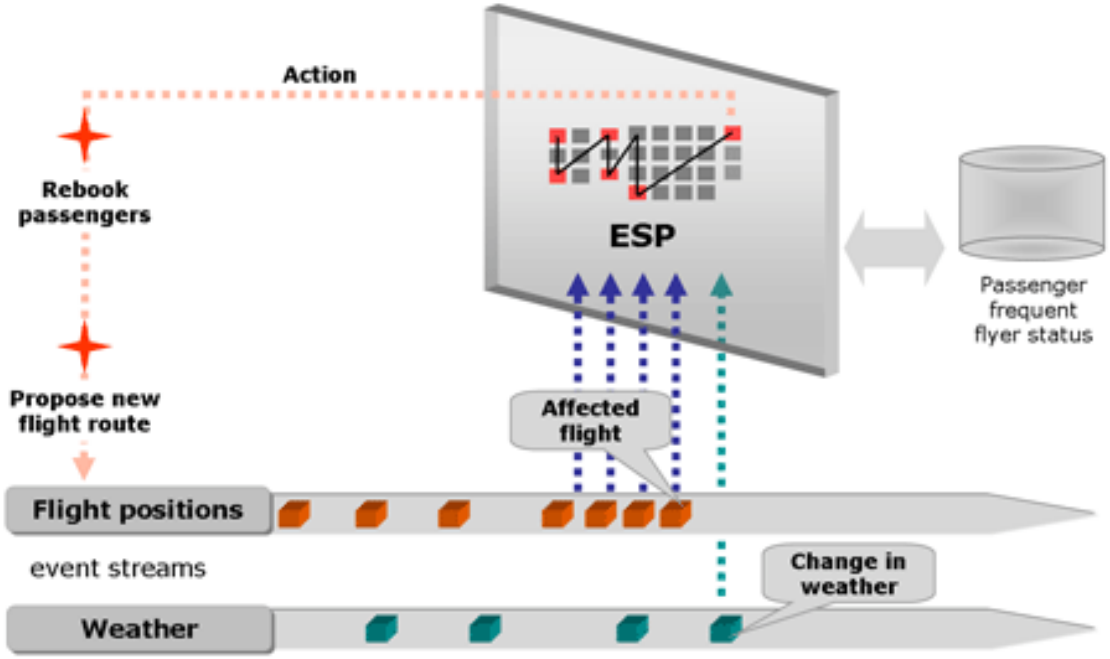
Source: http://www.complexevents.com

Event Stream Processing

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

  Events

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



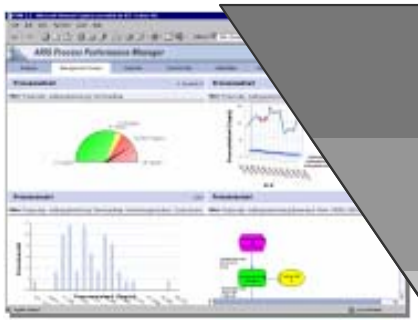
Numerous possibilities for applications!

For example, making the computation of credit rates in an online credit website dependant (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 und technical monitoring
- Event Processing identifies events in both worlds and correlates process/functions/service calls with the related technical systems



Cockpit

Process

Function

- ARIS PPM
- ORACLE BAM
- IBM Monitor
- …

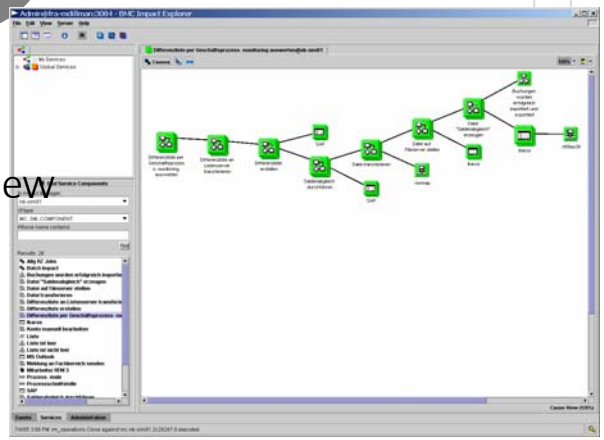
Event Processing

Service

Application

Network

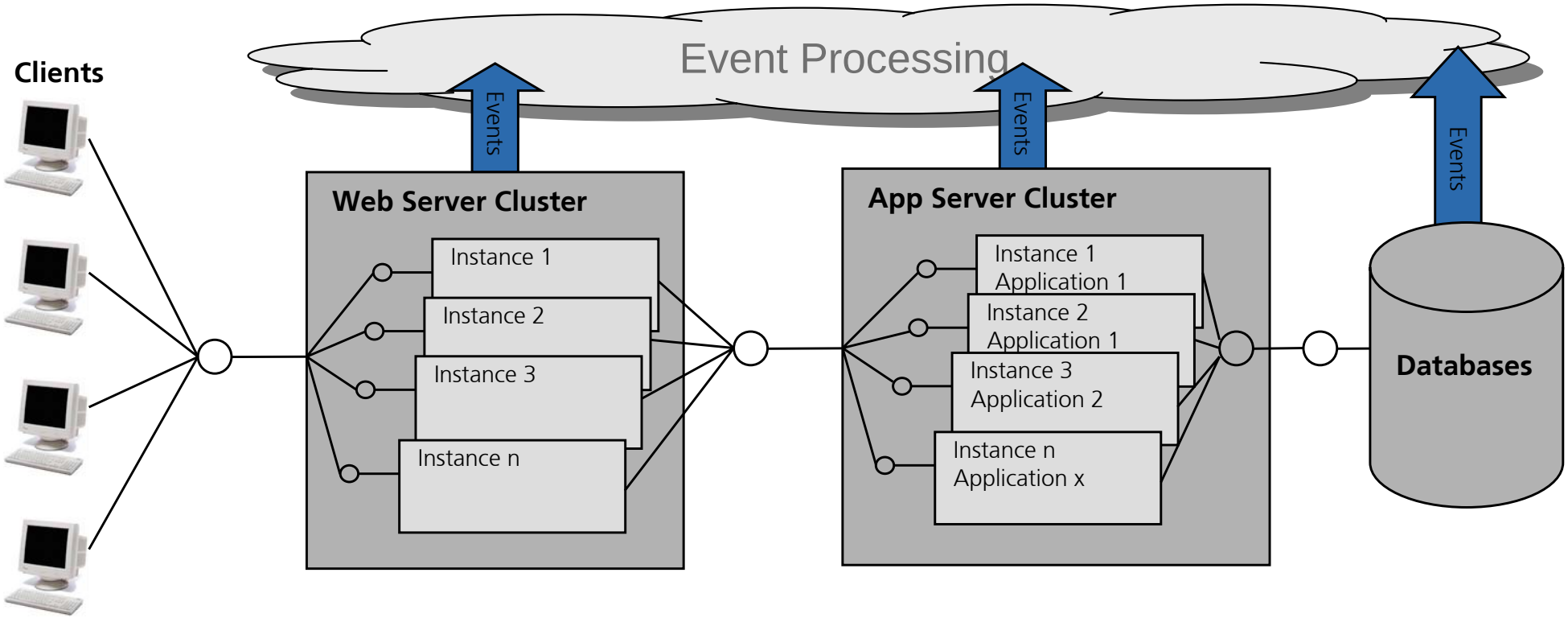
- IBM Tivoli
- HP OpenView
- BMC
- CA
- …



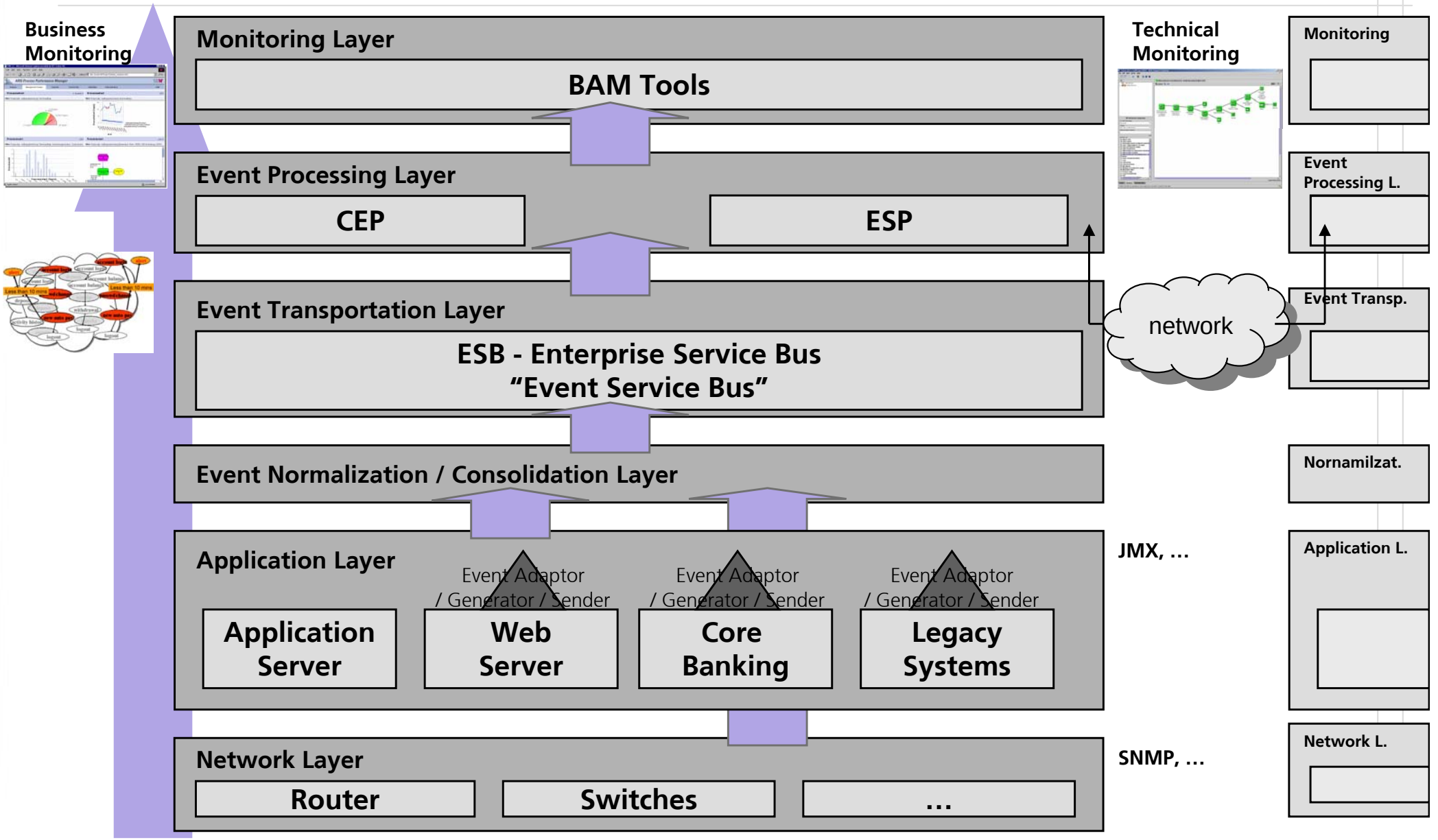
norisbank Event Processing Scenario

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

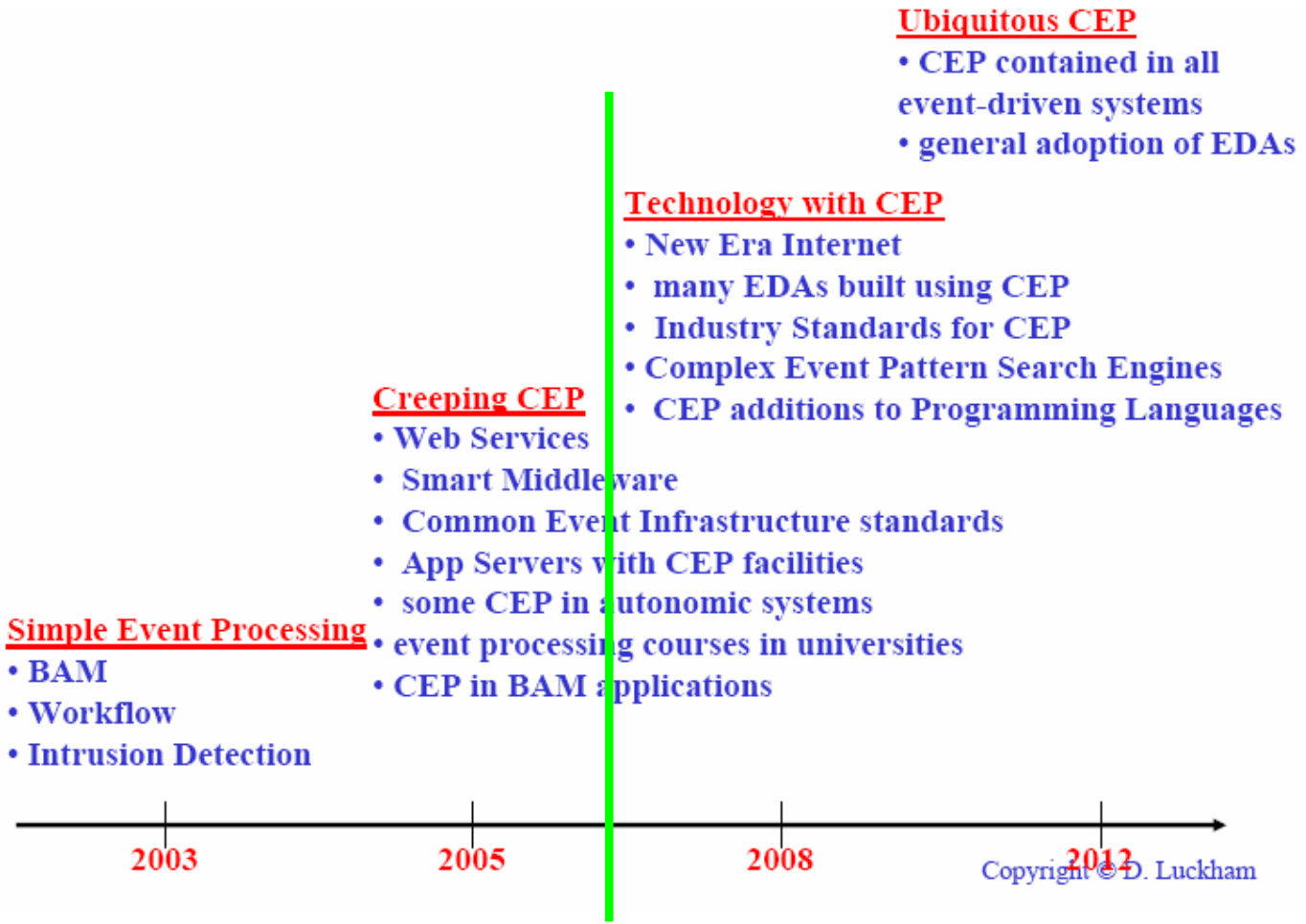
CORRELATIONS: Customer > Web Session > Web Server Instance > App Server Instance > Application Instance > Component > Affected Process Instance > Affected Process Template



norisbank Event Processing Architecture Draft



The Ascent of CEP



Thank you very much!

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