Effective Application and Architecture for Timely Business Solutions

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Monday, February 28, 2011 (11:00 a.m.– 12:00 noon)
Session Number: 9108
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What defines an application?

- A point-in-time transformation of data?
  - c. f. Batch, Client Server
- A wrapper for a user transaction?
  - c.f. CICS, JEE, Client Server
- Both rolled together, with a database as well?
  - c.f. IMS, 5GLs
- A business process, and all it’s necessary support and correspondents?
  - c.f. WPS and WebSphere stack, SOA
What is an application?

• An **automated** means for accomplishing an **organizational objective**?
  • Automated: That’s why we’re talking to IT professionals today
  • Organizational Objective: This is why your company hired you in the first place:
    • Do it well and your organization thrives
    • But understand that it will have to change tomorrow
Factoring Applications for the Dynamic Enterprise

• How you see a problem, depends on how you look at it!
• Components of an application (IT View)
  • Data
  • Code
  • User Interface
• Components of an application (business objectives view)
  • Triggering events
  • Processes
  • Decisions
(Triggering) Events

- Organizations need a reason to do something
- Can be simple and predictable:
  - Just got an application for new insurance coverage
  - Employee has left the company
- Or complex and dynamic
  - Five claims from the same customer for storm damage during period with only 3 weather events
  - Patient left cath lab to ICU, but no cuomarin dispensed within 3 hours
Insight contained in business events all around us

What is a Business Event?
An action that has occurred, or the absence of it occurring, which has relevance to the business

Nearly 4 Trillion RFID events are emitted each day

Large companies can experience up to 800 Billion business events (shipments, weather, customer contacts, delays) daily

Over 190 Billion emails are sent daily
Business Processes

- A “static” view of what needs to be done in response to a triggering event
  - Static in the sense that it is predictable, and diagrammable
  - But of course it evolves from day to day, month to month
- “what” can be
  - Human actions / interactions
  - Data actions (services)
  - Physical actions (print an Explanation of Benefits and mail it)
Business Process

Human-centric – Business Processes with a High Degree of Human Interaction

- **Human-centric** workflows supporting work assignment and collaboration
- **Ad-hoc human tasks** for dynamic / unstructured people collaboration
- **Page flows** controlling user interaction
- **Forms flows** present information to the user through electronic forms

Integration centric – Business Processes with a High Degree of Automation

- **Fully automated processes** ("lights off" workflow, including micro flows)
- **Combination of automation with human tasks** for decision making or exception handling
- **Content-related workflows** dealing with documents of various types
- **State machines** requiring event driven actions and state transitions

Business Processes that are Independent of the Degree of Automation

- **Multi-channel** enabled processes supporting multiple interaction channels
- **Business user workflows** are defined and deployed without direct IT involvement by business "power" users
- **Meta flows** – processes that dynamically interpret and adapt to varying input

…plus combinations from multiple categories
Decisions

• Represent your core competency as a business
  • Underwriting, pricing, commissions, fraud alerts, marketing targeting, ….

• Bring business processes to life, by creating different outcomes from the same process for variant situations
We need to add a validation step to meet the requirements of the new regulation.

Let’s create a special promotion for our best customers.

Can we automate approvals for this type of order?

And Changing Frequently
IF the Total purchases of Account > $2,500
THEN the enterprise value of Customer is GOLD

IF the enterprise value of Customer is GOLD
AND the Loyalty of Customer is LOW
THEN the personalization action is “Call”

IF at least 5 Interactions such that order type = Return
THEN the Loyalty of Customer is LOW

IF the enterprise value of Customer is GOLD
THEN the discount rate is 5%

= GOLD

= LOW LOYALTY
Putting it all in Context: Dynamic Application Infrastructure

- **BEP, BPM, BRMS** (events, process, rules):
  - Help realize business agility in that they
    - All place application definition in a business context
    - Have business expert interfaces for dynamically updating the “application”
  - Sit on solid information and transaction infrastructure
  - Collectively define a “business objective” on top of automation infrastructure approach
Extend action with better decisions
Leveraging BEP, BAM and BRMS

Know What’s Happening, When to Act and What to Do
Rule & Software Development Lifecycles

Software Development Lifecycle

- Design
- Construct
- Test
- Deploy
- Analyze
- Author
- Validate

- Functional enhancements
- Platform upgrade
- Change Request
- < 1 month
- > 4-6 months

Manage and Monitor

- Deploy
- Validate
- Author
- Analyze
- Change Request
- < 1 month

Rule Management Lifecycle

- Deploy
- Validate
- Author
- Analyze
- Change Request
Putting it all Together

When to decide

Events

Processes

Sources of Intelligence

Historical Intelligence

Organizational Intelligence

Algorithmic Intelligence

Planning / Optimization

Decision Awareness

Real time Monitoring

Business Intelligence

Decision Improvement

Decision Warehouse

Simulation

Automated Decision Improvement

Under Research

Putting it all Together

16 IBM Confidential
What does this have to do with z?

- IBM provides a solid z support for these approaches.
  - WebSphere Business Events for z/OS
  - WESB / WebSphere Process Server / WID on z
  - JRules for z/OS and Rules for COBOL
- With ready to use interface to and from CICS and IMS
Capture mainframe events for smarter business outcomes

CICS Event Sources

- **Funds Transfer**
- **Stock Trades**
- **CICS Business Logic**

With No Code Change!

Captured Events

- **Event Dispatching**
- **Routing**
- **Formatting**

CICS Event Processing

CICS TS V4

Detect fraud and take action

- **WebSphere Business Monitor**
- **WebSphere Business Events**

Other Event Consumers

- CICS Transactions
- Databases
- Applications
- Business Processes

Capture mainframe events for smarter business outcomes.
WBE integration with CICS Transaction Server

What’s under the hood

CICS Business Logic

Captured Events

No Code Change!

CICS Event Processing

Protocol Conversion

Payload Conversion

CICS TS v4 for z/OS

WebSphere Business Monitor

WebSphere Business Events

Databases

Applications

Business Processes

Other Event Consumers

SHARE in Anaheim 2011
Process Automation
Improves operating efficiency and reduce costs

Model and Simulate

Rapidly Deploy and Change

End-to-End Processes

Monitor, Predict and Act

Streamline business activities
Lower Costs

Complement and extend existing applications
Reduce cycle time

Leverages reusable process components
Easier to Manage

IBM WebSphere Process Server for z/OS
IBM WebSphere Business Monitor
IBM WebSphere Business Modeler
Automating workflow increases productivity and optimizes people

- Automatically route tasks to the right person
- Empower users with comprehensive task management tools
- Streamline workflow and automate escalations & exception handling

Can easily identify and route claims to processors with the right expertise
Increase Productivity Through Accelerated Solution Development

WebSphere Integration Developer V7.0

- Improve tooling experience for accelerated solution development
- Accelerate iterative development between business analysts and IT developers
- Supports the latest technologies and standards

Provides an easy-to-use design time tool for creating and assembling SOA business applications
ILOG Business Rule Management Solutions for COBOL Applications on System z

ILOG BRMS Management and Development

Rule Studio (Eclipse)

RTS Rule Repository

Rule Team Server (RTS Web)

Decision Validation Services

Development

Rule Management

Application Developer, Architect

Business Analyst, Business Manager

ILOG Business Rules for z/OS

Rules for COBOL

CICS, IMS, Batch Applications

Rule Execution Server

zOS and Linux on z
What is a business rule?

A statement of business logic that:
- Not cryptic code!
- Can be authored by business users
- Is self-documented, executable, reusable

Quasi-natural language

```
if the yearly repayment of 'the loan' is more than the yearly income of 'the borrower' * 0.3
then
add "Too big Debt-To-Income ratio" to the messages of 'the loan';
reject 'the loan';
```

Decision Tables

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<th>Condition</th>
<th>Is Named?</th>
<th>Is Graduated?</th>
<th>Age Min</th>
<th>Age Max</th>
<th>Dollar</th>
<th>Adjustment Type</th>
<th>Surcharge</th>
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<td>true</td>
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<td>≥ 23</td>
<td>surcharge</td>
<td>Driver Profile</td>
<td>Surcharge</td>
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<td>false</td>
<td>false</td>
<td>≤ 23</td>
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</tbody>
</table>

Decision Trees
The Smarter Approach: Facilitating Change with BRMS

Where Business Rules Exist

Applications

Documents

People

Processes

Business Rule Management System

Rules are Defined, Analyzed and Maintained

User Tools

Rule Repository

Rules are Managed and Stored

Rule Server

Rules are Deployed, Executed and Monitored

The Smarter Approach: Facilitating Change with BRMS
Events not to miss

Register now at: www.ibm.com/software/websphere/events/impact/

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Let’s Build a Smarter Planet on System z