Effective Application and Architecture for Timely Business Solutions

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IBM Corporation

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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 interfaces
- 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

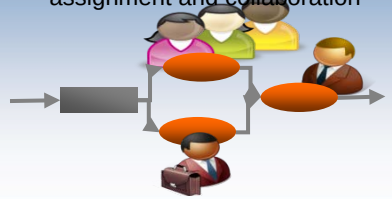
Business Processes

- A “static” view 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 a Explanation of Benefits and mail it)

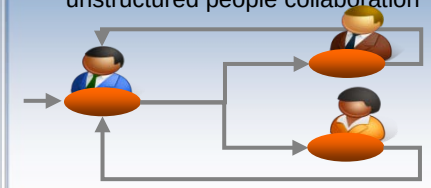
Business Process

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

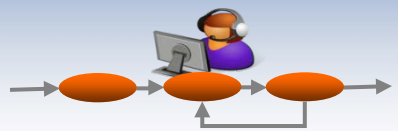
Human-centric workflows supporting work assignment and collaboration



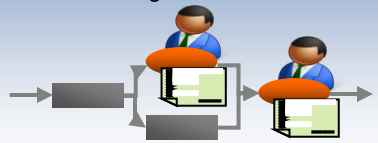
Ad-hoc human tasks for dynamic / unstructured people collaboration



Page flows controlling user interaction



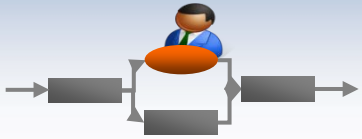
Forms flows present information to the user through electronic forms



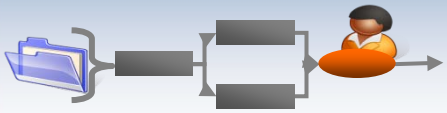
Integration centric – Business Processes with a High Degree of Automation

Fully automated processes ("lights off" workflow, including micro flows)

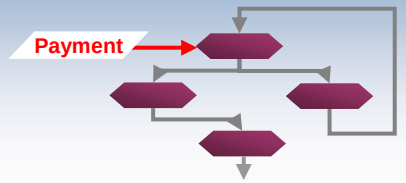
Combination of automation with human tasks for decision making or exception handling



Content-related workflows dealing with documents of various types

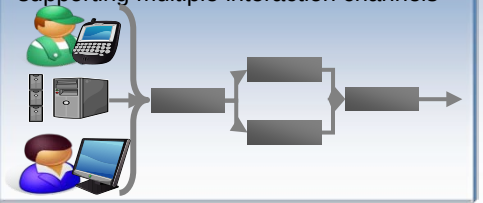


State machines requiring event driven actions and state transitions

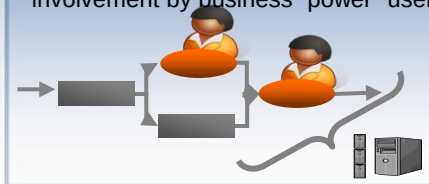


Business Processes that are Independent of the Degree of Automation

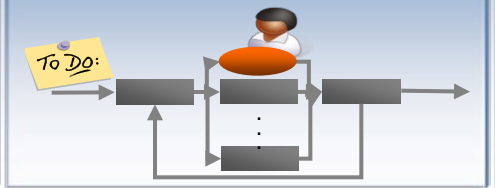
Multi-channel enabled processes supporting multiple interaction channels



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

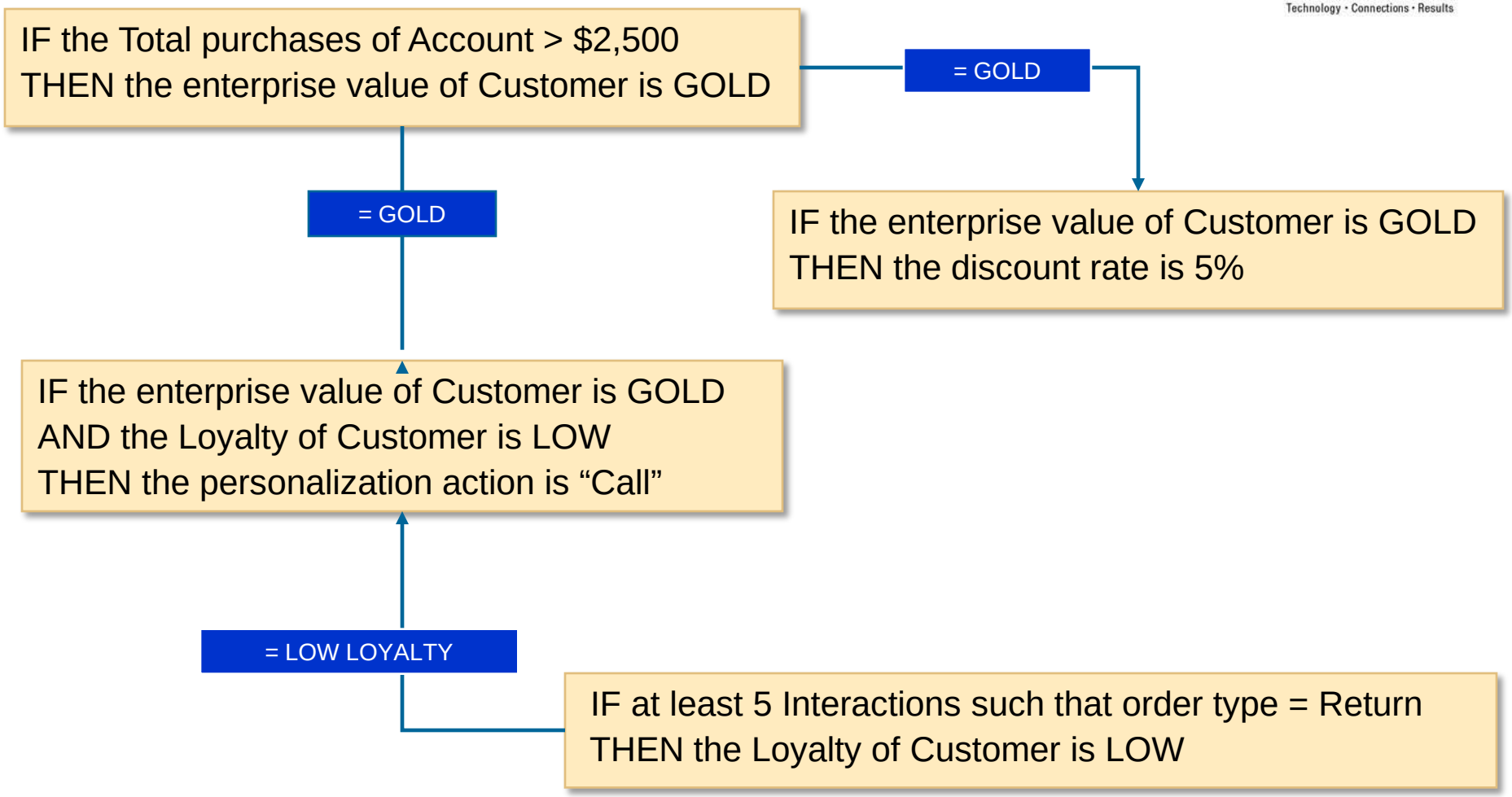
Decisions

- 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

Business decisions are everywhere…

And Changing Frequently

What is a business decision?



Putting it all in Context: Dynamic Application Infrastructure

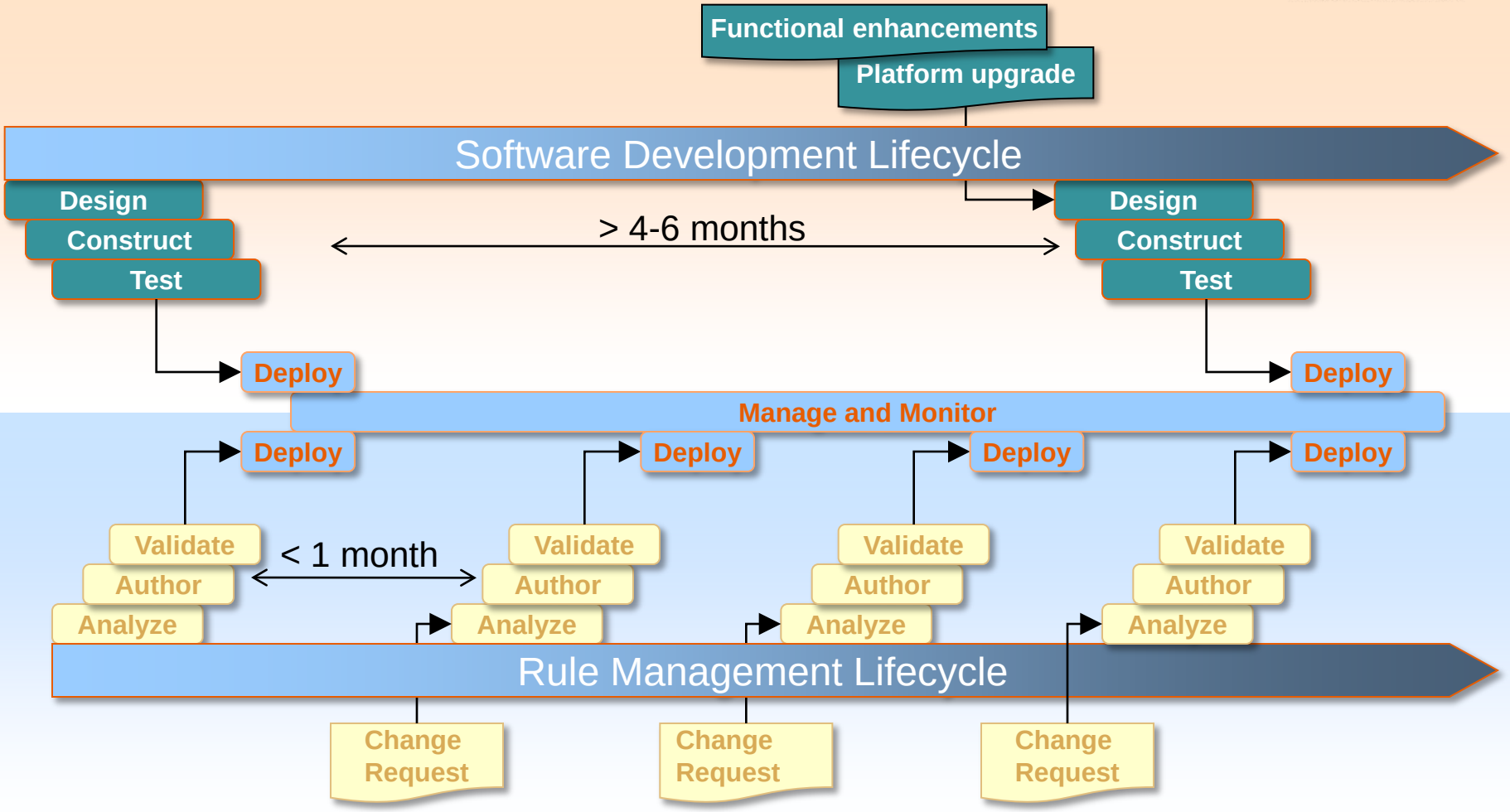
- BEP, BPM, BRMS (events, process, rules):
  - Help realize business agility in that they
    - All place application definition in a business context
    - Have business expert interfaces for dynamically updating the "application"
  - Sit on solid information and transaction infrastructure
  - Collectively 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

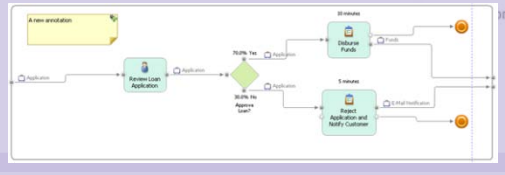


Putting it all Together

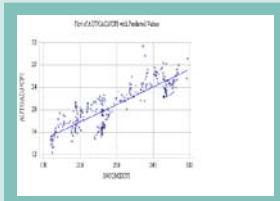
When to decide

Events

Processes



Sources of Intelligence



Historical Intelligence

Organizational Intelligence

Algorithmic Intelligence
Planning / Optimization *

Decision Implementation

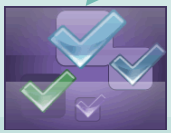
Decision Engine

Decision Awareness

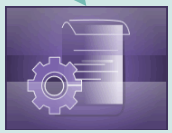
Real time Monitoring
Business Intelligence

Decision Improvement

Decision Warehouse



Simulation



Automated Decision Improvement *

* Under Research

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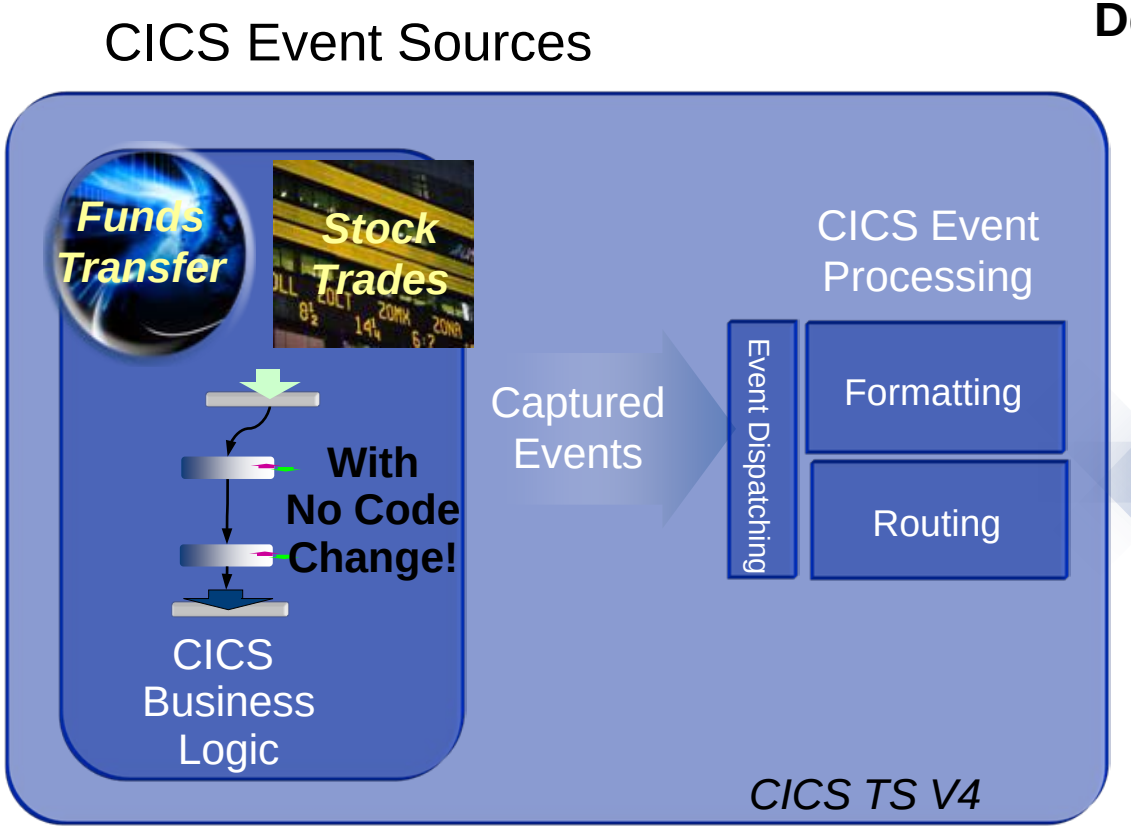
What does this have to do with z?

- IBM provides a provides 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



Detect fraud and take action

WebSphere Business Monitor

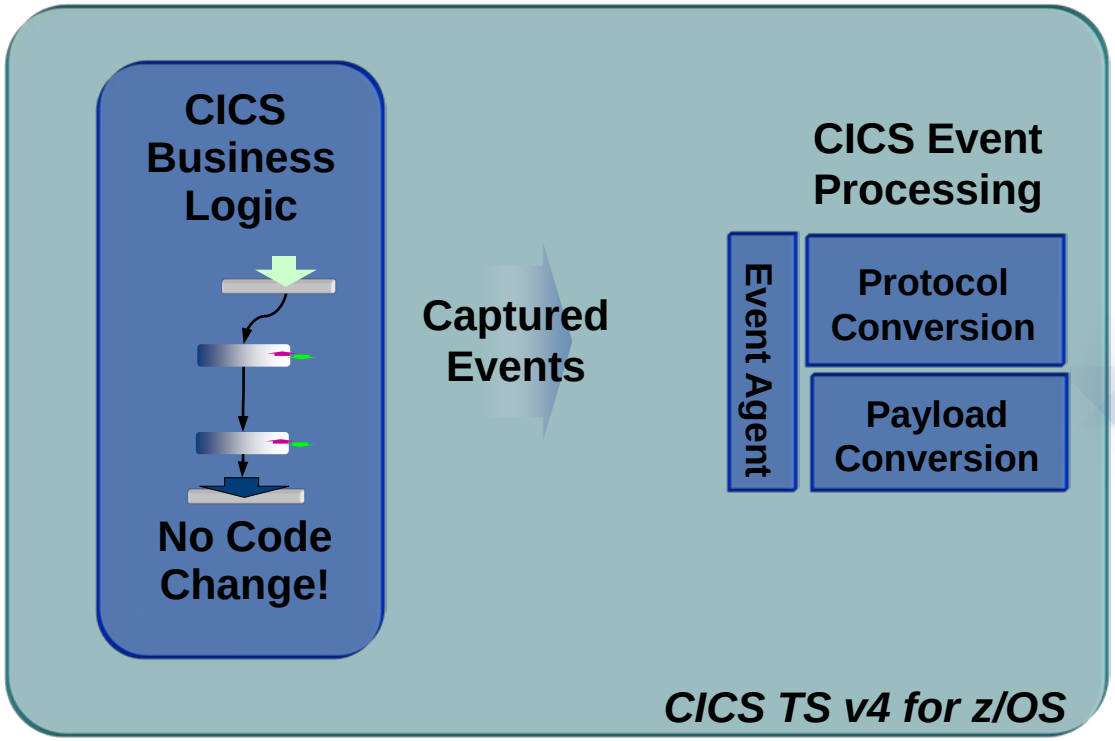
WebSphere Business Events

CICS Transactions
Applications
Databases
Business Processes

Other Event Consumers

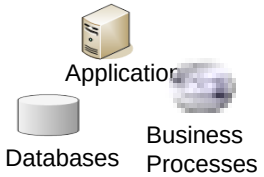
WBE integration with CICS Transaction Server

What's under the hood



WebSphere Business Monitor

WebSphere Business Events



Other Event Consumers

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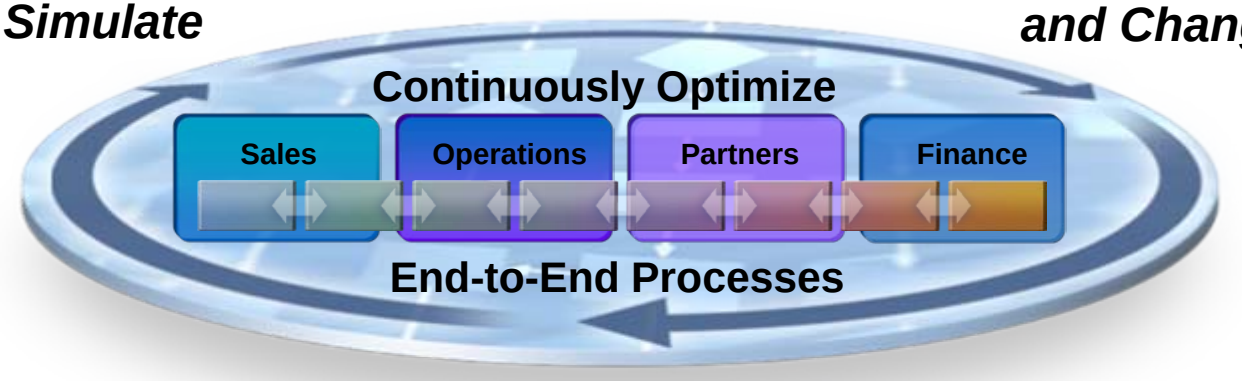
Process Automation

Improves operating efficiency and reduce costs



Streamline business activities

Lower Costs

IBM WebSphere Process Server for z/OS

Complement and extend existing applications

Reduce cycle time

IBM WebSphere Business Monitor

Leverages reusable process components

Easier to Manage

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

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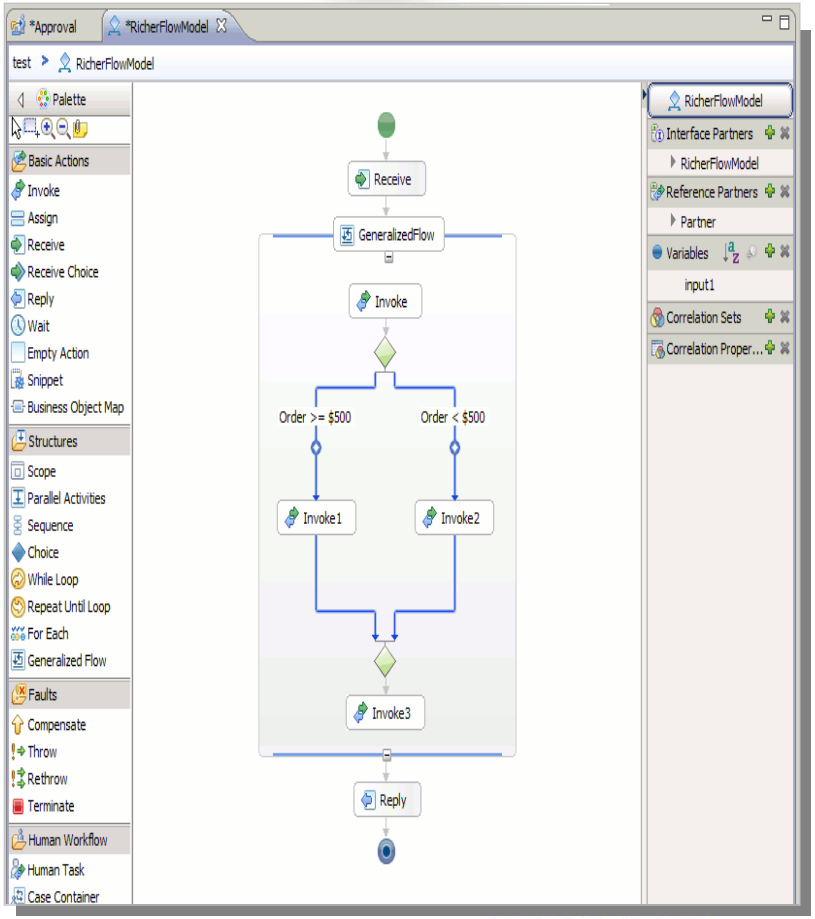
Technology · Connections · Results

- 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

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ILOG Business Rule Management Solutions for COBOL Applications on System z

Application Developer, Architect

Development

ILOG BRMS Management and Development

Rule Studio (Eclipse)

ILOG Business Rules for z/OS

Rules for COBOL

RTS Rule Repository

CICS, IMS, Batch Applications

Business Analyst, Business Manager

Rule Management

Rule Team Server (RTS Web)

Decision Validation Services

Rule Execution Server zOS and Linux on z

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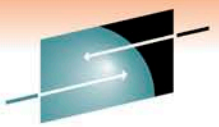
What is a business rule ?



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

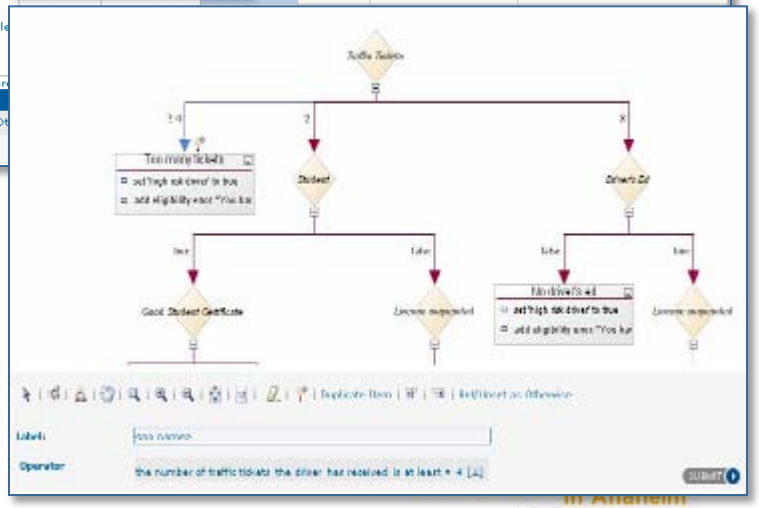
	Gender	Is Married?	Is Graduate?	Age Min	Age Max	Surcharge Dollar	Surcharge Adjustment Type	Surcharge Reason
0	male	false	false	≤ 23		23	surcharge	Driver Profile Surcharge
1				24	30	18	surcharge	Driver Profile Surcharge
2				31	35	13	surcharge	Driver Profile Surcharge
3			true	≤ 23		20	surcharge	Driver Profile Surcharge
4				24	30	15	surcharge	Driver Profile Surcharge
5				31	35	10	surcharge	Driver Profile Surcharge
6		true	false	≤ 23		18	surcharge	Driver Profile Surcharge
7				24	30	14	surcharge	Driver Profile Surcharge
8				31	35	10	surcharge	Driver Profile Surcharge
9			true	≤ 23		15	surcharge	Driver Profile Surcharge
10				24	30	10	surcharge	Driver Profile Surcharge
11					35	5	surcharge	Driver Profile Surcharge
12	female					16	surcharge	Driver Profile Surcharge
13								
14								
15								

edit table pr

Editor

Operator

Decision Trees



Business Rule

A statement of business logic that:

- ✓ Not cryptic code!
- ✓ Can be authored by business users
- ✓ Is self-documented, executable, reusable

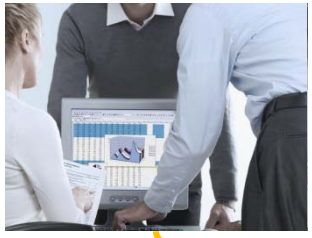
The Smarter Approach: Facilitating Change with BRMS

Where Business Rules Exist

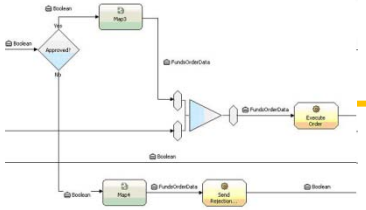
```
#ifdef  __WIN__
  /*
    Before performing any socket operation (like retrieving hostname
    in init_common_variables we have to call WSAStartup
  */
  {
    WSADATA WsaData;
    if (SOCKET_ERROR == WSAStartup (0x0101, &WsaData))
    {
      /* errors are not read yet, so we use english text here */
      my_message(ER_WSAS_FAILED, "WSAStartup Failed", MYF(0));
      unireg_abort(1);
    }
  }
#endif /* __WIN__ */

  if (init_common_variables(MYSQL_CONFIG_NAME,
                            argc, argv, load_default_groups))
    unireg_abort(1);                        // Will do exit

  init_signals();
  if (!(opt_specialflag & SPECIAL_NO_PRIOR))
    my_pthread_setprio(pthread_self(),CONNECT_PRIOR);
```

Applications

Documents

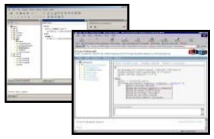


People



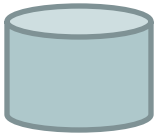
Processes

Business Rule Management System



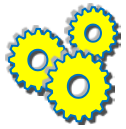
User Tools

Rules are Defined, Analyzed and Maintained



Rule Repository

Rules are Managed and Stored



Rule Server

Rules are Deployed, Executed and Monitored

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