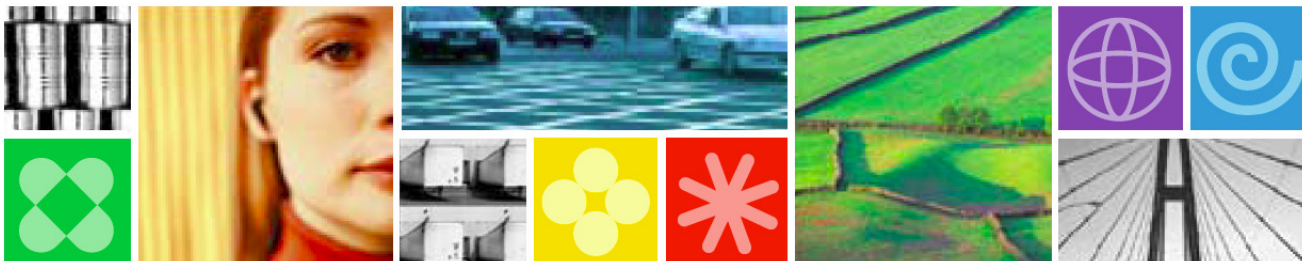




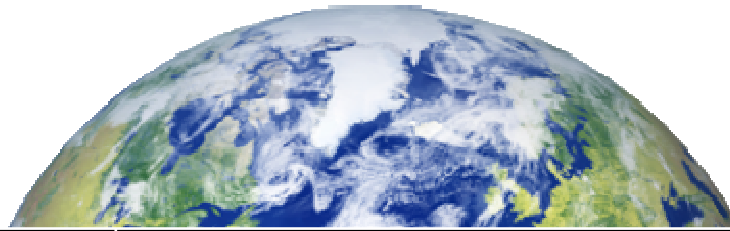
Managing the decision logic that drives System z business solutions





IBM Vision at a Glance...

Smarter Planet



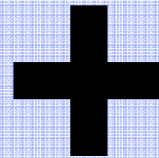
- instrumented
- interconnected
- intelligent
- people
- companies, institutions, industries
- man-made systems
- nature's systems



Today's Imperatives Are...

Cost Optimization

to slash operational and maintenance expense and maximize efficiency necessary for all economic climates



Agility

to take advantage of new revenue opportunities and address competitive threats

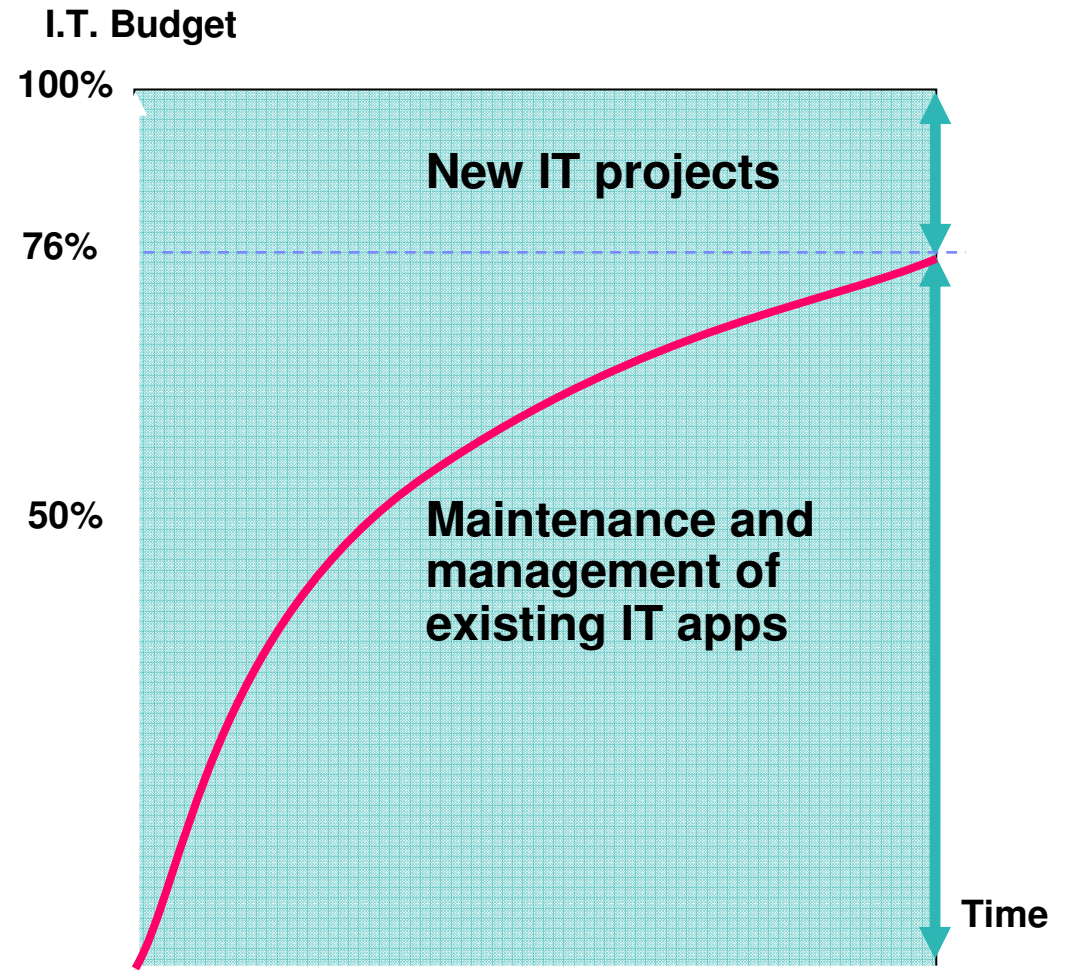
To Survive... To Succeed!



Where are you spending your IT Budgets?

“76% of I.T budgets are spent on MAINTENANCE, leaving only 24% for NEW INVESTMENTS.”

--- Forrester Research

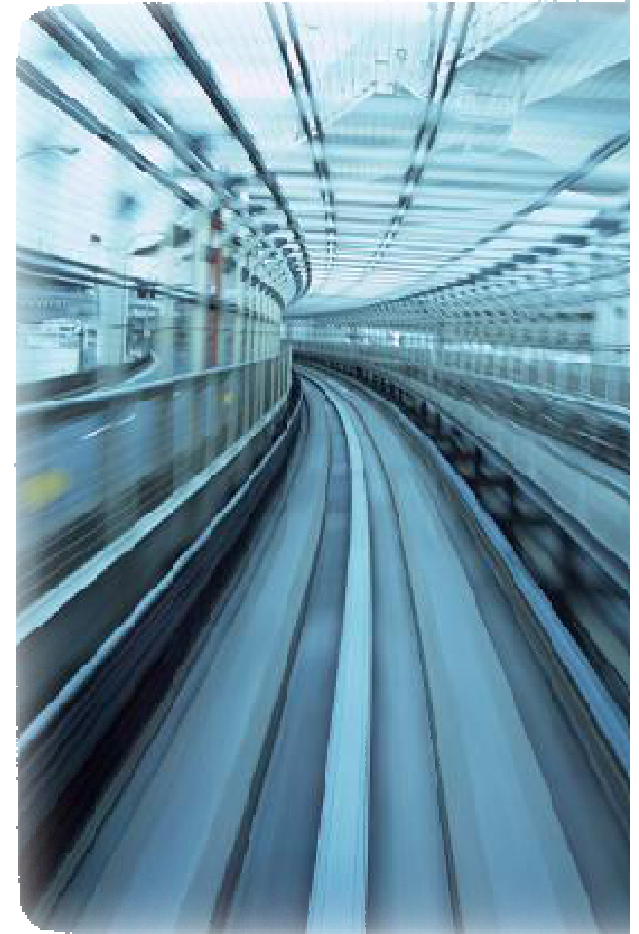




We face the challenge of accelerating market shifts

- **Rising consumer expectations compel improvements in speed and personalization**
- **Rapid swings in economic and commodity markets highlight lack of adaptability**
- **Lower barriers to entry in a digital, flat world, enable fast and easy access by new competitors**

How do businesses evolve
to adapt and respond dynamically?





Flexible process automation increases agility and enables rapid change

- **Improve agility and time to market**
- **Manage rule based decisions**
- **Incremental application modernization**



*Business rules to drive
flexible process
automation*



Agenda

- **What are Business Rules and a Business Rule Management System (BRMS)?**
- **Where a BRMS fits within your z Architecture and what are your options?**
- **What are the ILOG BRMS System z Solutions?**



Improve agility and time to market

Business Decisions are Everywhere...





Improve agility and time to market

Business Decisions are Everywhere...

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



Improve agility and time to market

Business Decisions are Everywhere...

We need to add a validation step to meet the requirements of the new regulations.

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

Up-sell/Cross-sell offer

Commissions / Royalties

Compliance Screening

Underwriting Tax calculation

Billing Fraud assessment Documentation Requirements

Configuration Accounting Disposition

Eligibility Pricing Product Selection

Benefit calculation

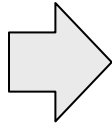
Can we automate approvals for this type of order?

And Changing Frequently

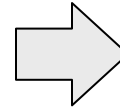


Business Policies and Business Rules

Business Policies



Business Rules
Formal statements of business policies that define or constrain some aspect of the business

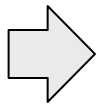


Business Applications

Pricing / Quoting
Underwriting
Commissioning
Claim Processing
Order Management
Risk
Fraud Detection
Accounting...

Example:

Only prime loans are eligible for purchase



If loan amount is less than or equal to prime loan limit
Then loan type is prime

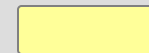
If loan type is not prime
Then reject loan



Point of Sale



Servicing





Improve agility and time to market

Traditional Approach for Managing Decision Change

The traditional (ad hoc) approach of dealing with rule changes leads to...

- Reduced organizational agility
- Reduced employee productivity
- Increased load on IT

Where Business Rules Typically Exist

```

Mfdef __MCR__
/*
Before performing any socket operation (like retrieving hostname
in test_common_variables we have to call WSASStartup
*/
{
WSADATA Wsadata;
IF (SOCKET_ERROR == WSASStartup (0x0101, @Wsadata))
/* errors are not read yet, so we use english text here */
my_message(ER_MSAS_FAILED, "WSASStartup Failed", MFC00);
wsireg_abort();
}
#endif /* __MCR__ */
IF (test_common_variables(MYSQL_CONFIG_NAME,
argc, argv, load_default_groups))
wsireg_abort(); // will do exit
test_signal();
IF (test_specialflag & SPECIAL_HQ_PR10R)
my_thread_setprio(pthread_self(), CONNECT_PR10R);

```

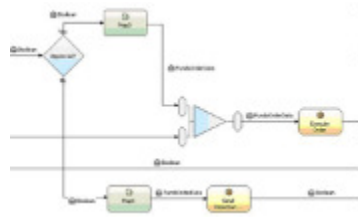
Applications



Documents



People



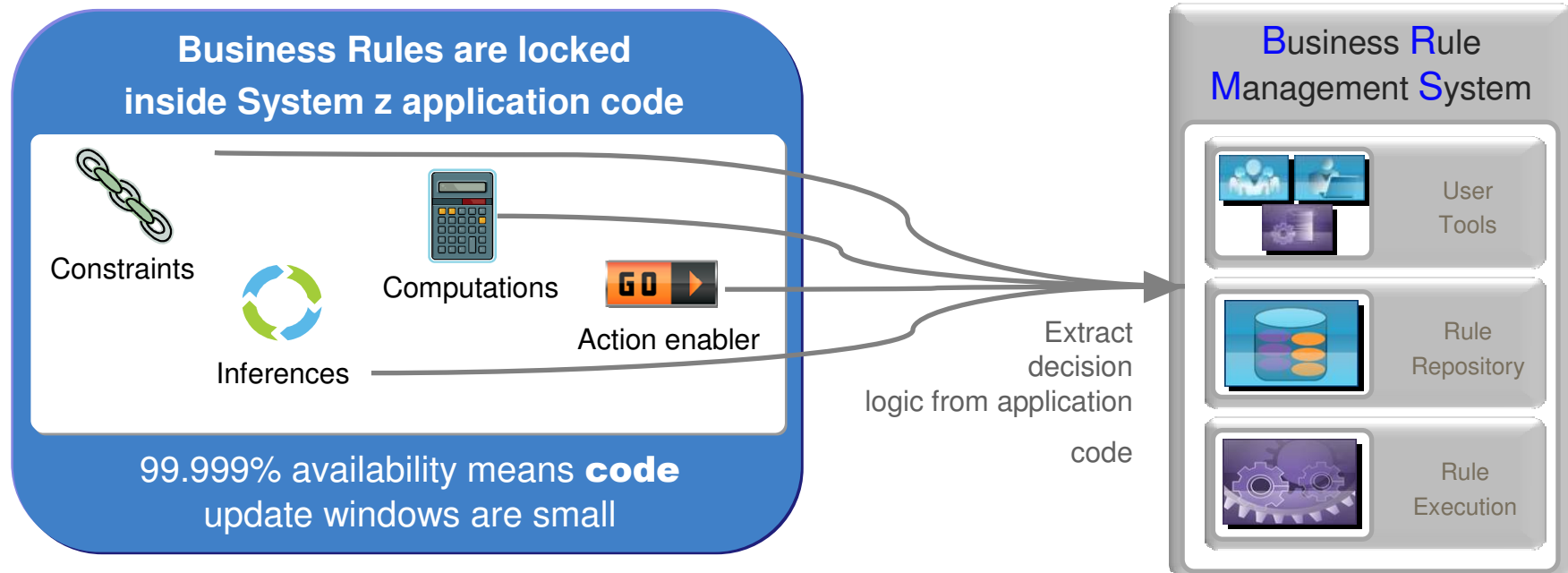
Processes

Issues

- Rules are hidden in code or isolated within the organization
- Changes are hard to track and maintain over time
- Rules used by systems have to be programmed and require IT resources
- Duplication and multiple versions of the same rules
- Lack of auditability, traceability
- Decision changes cannot be easily tested or simulated



More Agile Approach with Business Rule Management System (BRMS)

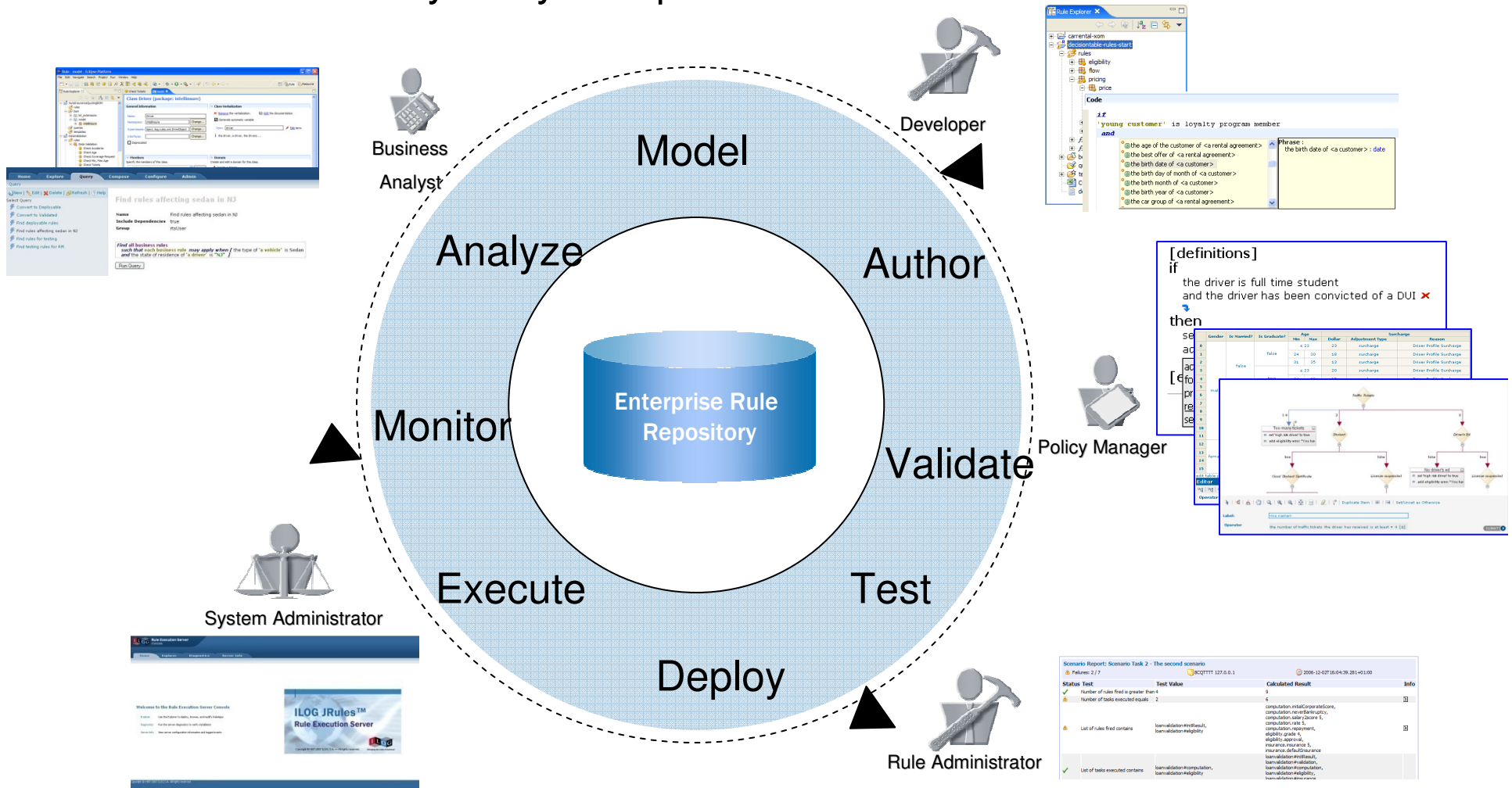


- **Adapt faster to ongoing change requirements**
 - Respond to customer and industry demands by deploying rule changes independently from lengthy application maintenance cycles
- **Reduce load on IT development**
 - Express decision logic in business language terms to enable your business experts to participate in rule changes
 - Validate rules execution without the need to retest the whole CICS application



Business Rules Management System (BRMS)

Provides complete functionality and tooling to fully maintain and manage an organization's business rules through the complete business rule life cycle by multiple roles.





BRMS Value across Roles



IT Leader

Benefits for my role:

- Lower TCO
- Increase automation
- Better service level to users



Business Leader

Benefits for my role:

- competitive advantage
- reduced risk
- Increase automation



IT Architect

Benefits for my role:

- Easier to support architecture
- Reduced integration costs
- Enterprise sharing of rules



Process Owner

Benefits for my role:

- Better visibility
- Enterprise sharing of rules



IT Developer

Benefits for my role:

- Higher development productivity
- Offload overhead to business
- Greater app control but giving greater user flexibility



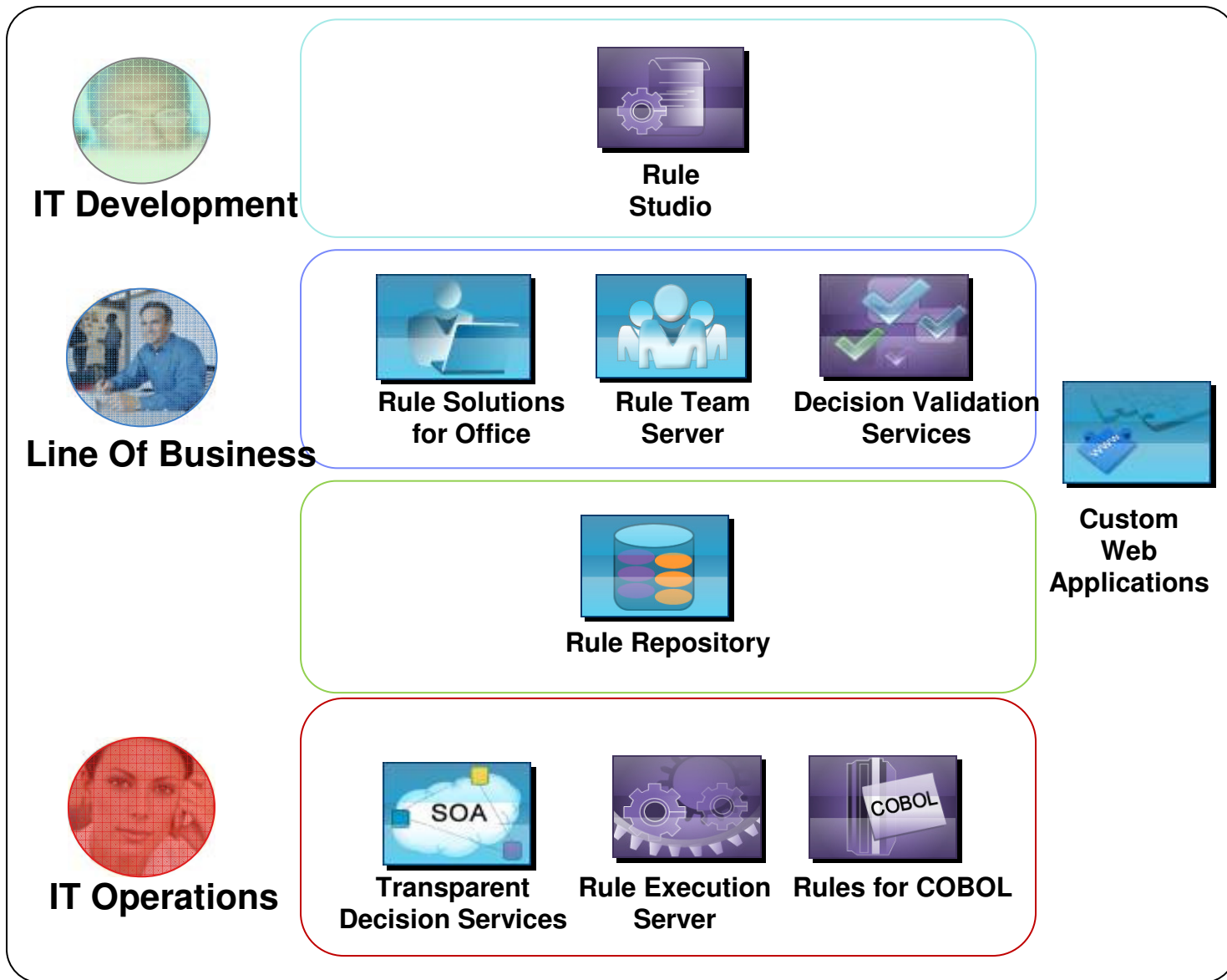
Business Analyst

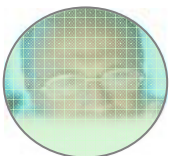
Benefits for my role:

- Implement rules outside of normal release cycle
- Non-technical rules
- More responsive system



WebSphere ILOG JRules BRMS





IT Development


Rule Studio

Design


Line Of Business



Rule Solutions for Office


Rule Team Server



Decision Validation Services

Maintain



Custom Web Applications


Rule Repository

Share


IT Operations


Transparent Decision Services


Rule Execution Server


Rules for COBOL

Deploy



Intuitive Rule Authoring Environments

if
 the one way driving distance of the vehicle coverage request [a] is more than ▼ 50 [a]
 and the type of the vehicle is Sport Utility Vehicle

then
 add a ▼ \$ 25 [a] surcharge to [a], reason: ▼ <enter a value> [a]

Point & Click

Coupe
 Pickup Truck
 Sedan
 Sport Utility Vehicle
 Sports Coupe

Decision Tables

	Gender	Is Married?	Is Graduate?	Age		Dollar	Surcharge		Reason
				Min	Max		Adjustment Type		
0				≤ 23		23	surcharge		Driver Profile Surcharge
1			false	24	30	18	surcharge		Driver Profile Surcharge
2		false		31	35	10	surcharge		Driver Profile Surcharge
3			true	≤ 23					Driver Profile Surcharge
4				24	30				Driver Profile Surcharge
5				31	35				Driver Profile Surcharge
6	male			≤ 23		18	surcharge		Driver Profile Surcharge
7			false	24	30	14	surcharge		Driver Profile Surcharge
8		true		31	35	10	surcharge		Driver Profile Surcharge
9				≤ 23		15	surcharge		Driver Profile Surcharge
10			true	24	30	10	surcharge		Driver Profile Surcharge
11				31	35	5	surcharge		Driver Profile Surcharge
12				≤ 21		16	surcharge		Driver Profile Surcharge
13	female	false	false	22	27	10	surcharge		Driver Profile Surcharge
14				28	33	6	surcharge		Driver Profile Surcharge
15			true	≤ 21		12	surcharge		Driver Profile Surcharge

edit table preconditions | edit table | 0 - 15 | 15 - 30 | All

Editor

Operator the age of the driver is at most ▼ 21 [±] SUBMIT

Scorecards

Attribute	Range	Weight(%)	Score	Reason Code
Months since last bankruptcy	1 ≤ Months since last bankruptcy < 3	100	0	MLB
	3 ≤ Months since last bankruptcy < 6		20	
	≥ 6		60	
Number of Bankruptcies	≤ 1	30	150	NB
	1 ≤ Number of Bankruptcies < 2		100	
	2 ≤ Number of Bankruptcies < 3		50	
Number of Foreclosures	≤ 1	20	100	NF
	1 ≤ Number of Foreclosures < 2		30	
	2 ≤ Number of Foreclosures < 3		10	
Number of 30 days Late Payment	≤ 1	5	100	30LP
	1 ≤ Number of 30 days Late Payment...		80	
	3 ≤ Number of 30 days Late Payment...		60	
Number of 60 days Late Payment	≤ 1	15	100	
	1 ≤ Number of 60 days Late Payment...		80	
	3 ≤ Number of 60 days Late Payment...		30	

Decision Trees

```

  graph TD
    Root(( )) -- 2,4 --> T1[Too many tickets]
    Root -- 2 --> D1{Student}
    Root -- 3 --> D2{Driver's Ed}
    
    T1 --> S1[set 'high risk driver' to true]
    T1 --> E1[add eligibility error: "You have too many tickets"]
    
    D1 -- true --> GSC{Good Student Certificate}
    D1 -- false --> LS1[License suspended]
    
    D2 -- false --> NDC[No driver's ed]
    D2 -- true --> LS2[License suspended]
    
    NDC --> S2[set 'high risk driver' to true]
    NDC --> E2[add eligibility error: "You have no driver's ed"]
  
```

Operator the number of traffic tickets the driver has received is at least ▼ 4 [±] SUBMIT



Rules Authoring Delivered to Business

Eligibility.xlsx - Microsoft Excel

Decision Table

	A	B	C	D	E	F
1	A	City	C	D	E	
2			Min	Max		
3			≤ 22.00	FALSE	The customer's age is below the minimum for ren	
4	New Hampshire	X	23	70	TRUE	The customer is eligible to rent in New
5			≥ 71.00	FALSE	The customer's age is past the maximum for rent	
6			≤ 20.00	FALSE	The customer's age is below the minimum for re	
7	Rhode Island	A	21	70	TRUE	The customer is eligible to rent in Rho
8			≥ 71.00	FALSE	The customer's age is past the maximum for ren	

Rules

Row 4

Definitions...

If

- all of the following conditions are true:
 - the state of the pickup branch of the rental agreement is New Hampshire
 - the last name of the customer starts with X
 - the age of the customer of the rental agreement is between 23 and 70

Then

- set the rental agreement accepted status to True
- display the message: The customer is eligible to rent in New Hampshire.

Else...



Word Tutorial - copied.docx - Microsoft Word

Rules

RuleDoc Outline

- Compute the Base Rate
- Check the Eligibility for the Defau...
- Define the Pricing of the Default...
- Check the Eligibility for the Long...
- Define the Pricing of the Long Te...

Rule Properties

Problem List

- The word "true" is expected in place

Page 3 of 10





Improve agility and time to market

ILOG BRMS Case Study

Challenge

- The company was missing revenue by not being able to present the right offer at the right time when a customer was on-line.
- Decision logics were scattered and inconsistent across channels.
- Poor customer experience: branch staff would sometimes try to cross-sell to clients who did not qualify for the additional credit, resulting in negative client experience

Solution

- Create an ILOG BRMS based cross-sell/up-sell solution
- Decision support throughout generation of personalized & qualified offers
- Cross-channel (branches, call centers, etc.), cross-product & customer centric
- Agile solution from both business & IT standpoints!

Business Benefits

- Improved client relationship – acquisition, retention & wallet-share
- Accelerated ROI
 - Increased revenues - \$14M in approved bookings in 2.5 months
 - Significantly increased cross-sell offers: from 13% to 40%
 - Significantly increased acceptance from 3% to 20%-30%
- Instant updates of rules fully managed by business users.

One of the Largest Financial Service Providers in the World Dramatically Increases Revenue through Cross-sell/Upsell

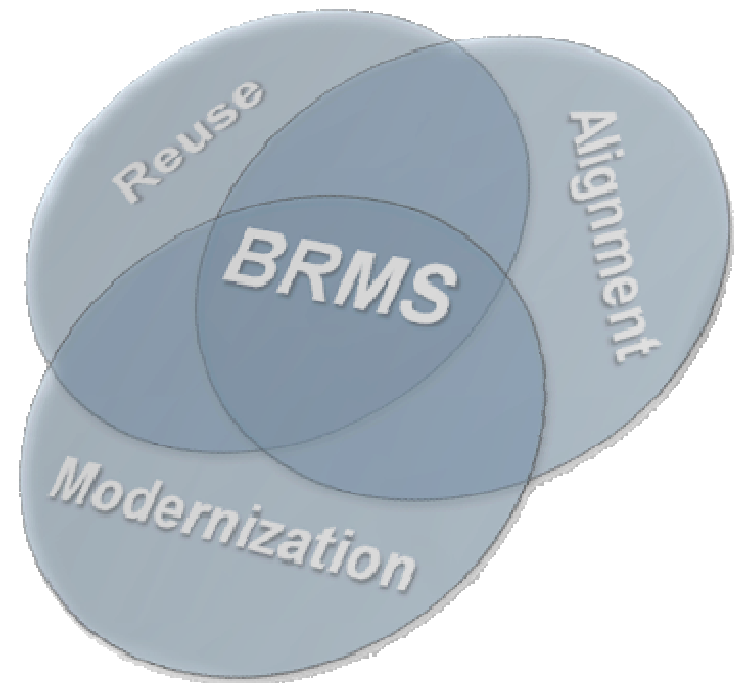


Manage rule based decisions

Manage rule based decisions

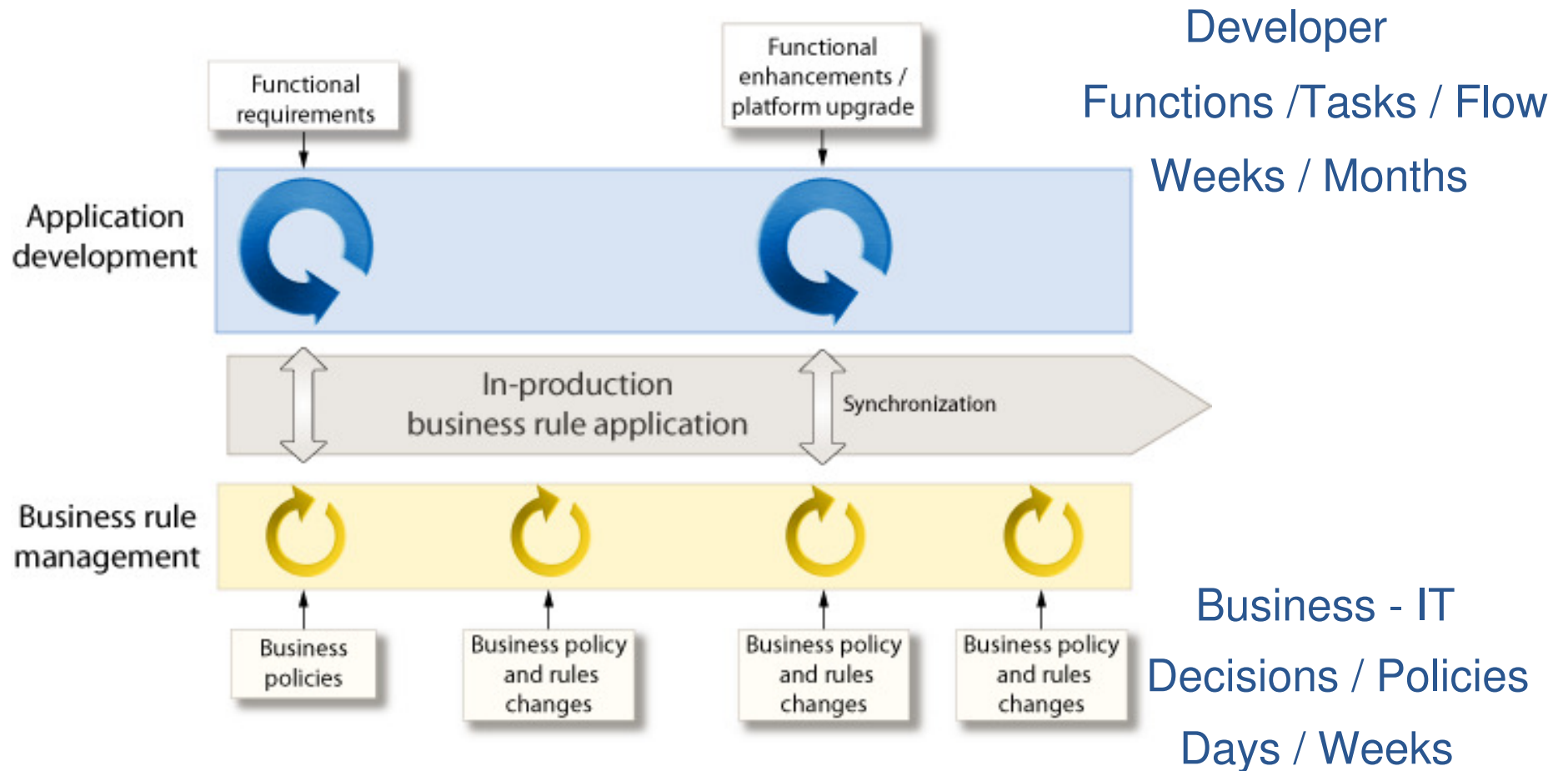
ILOG BRMS is *the IBM technology* for creating, maintaining and implementing decision services...

- Allows for easy implementation and reuse of business rules
- Provides a convenient communication channel between IT and business teams
- Improved regulatory compliance
- Consistency in applying business decisions across applications





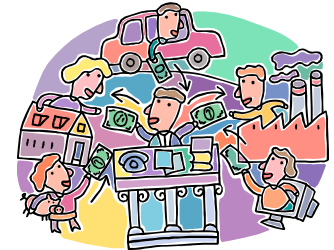
Redefined Application Change Cycle





Key Interests for System z Customers.....

- **Consolidation and/or maintenance of COBOL applications**
 - Looking for costs savings – z Hardware and People
 - Need to prove value of modernization of the COBOL applications sooner rather than later
 - Be able to react to changes requested by business
 - Be able to quickly find where to make the rule changes
- **2010 Maintenance Projects**
 - Need to “open up the application” - to add new functionality; new product; new business policy
- **Running Parallel**
 - Application development effort to take a large application and migrate it to another platform – how do you keep the rules in sync over the various phases without multiple maintenance efforts?
- **Sharing Rules across Platform**
 - Benefits have been already proven using LOG JRules BRMS in distributed applications and needs to be able to share those same rules in System z applications





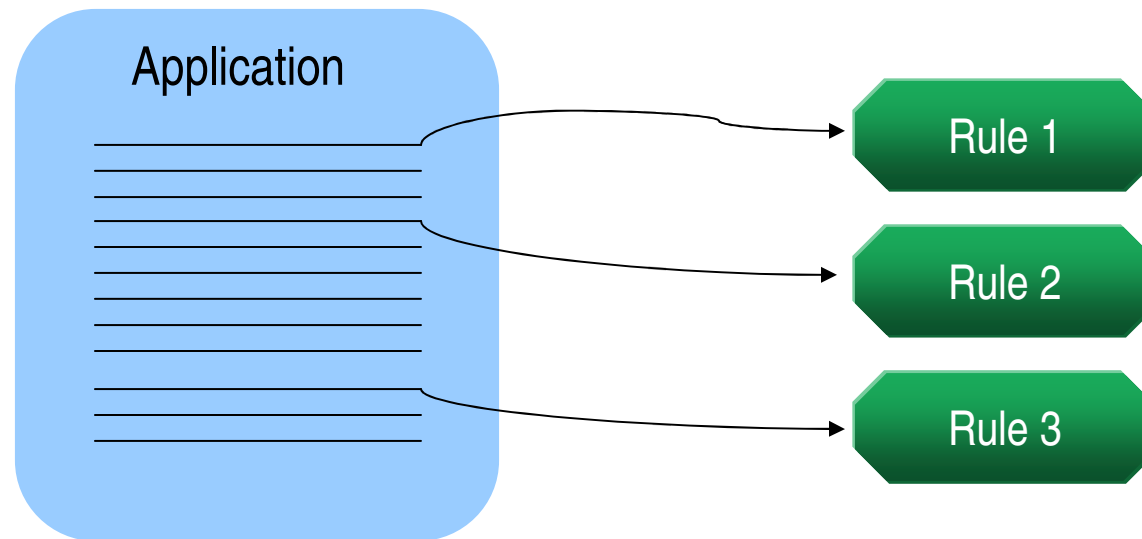
How Does a BRMS Benefit?

- **Consolidation and/or maintenance of COBOL applications**
 - Author rules in JRules...verify which rules will move them into the future
 - Rules can now be shared across applications...new and **old**
- **2010 Maintenance Projects**
 - Projects that are changing rules...why not upgrade to a BRMS and make rules available to Business Users...faster changes....decrease future maintenance costs and time
- **Running Parallel**
 - Basically you can not turn one application off and turn on a new application
 - Phased approach
- **Sharing Rules across Platform**
 - Already understand the value of a BRMS...why not use this proven technology with their mission critical COBOL applications



Incrementally Modernize Applications

Use ILOG BRMS to unlock rules hidden in existing applications

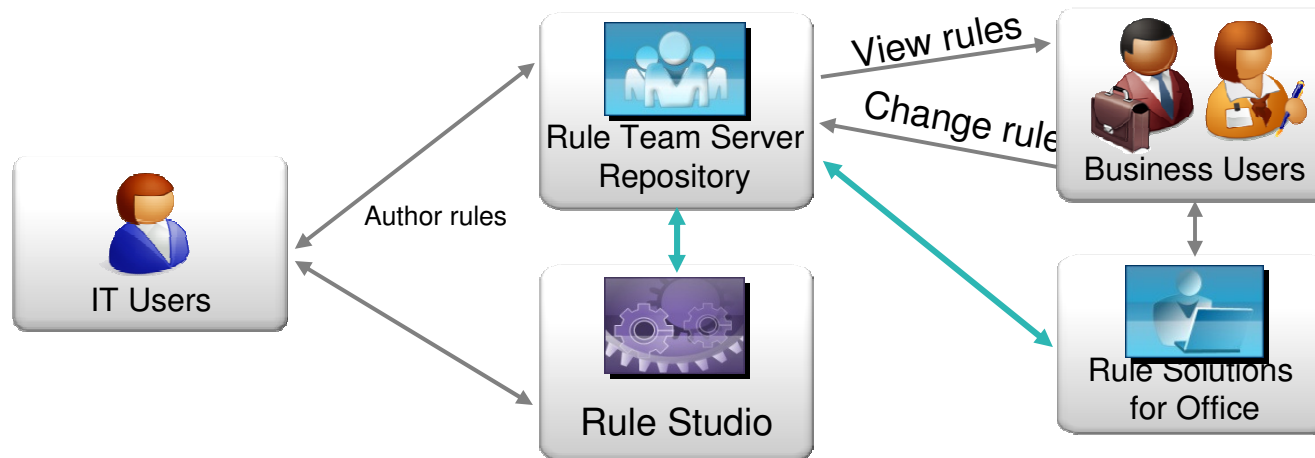


- **Gradually pull out rules from existing applications**
 - Rewrite business rules in natural language and store them in a central location
 - Does not require a “big bang” change



Reduce the Load on IT Development

Use ILOG BRMS to align Business and IT on decisions and rules



- Provide visibility of business rules to Business Users via Web interface
- Provide selective rule authoring ability to Business Users via Web interface
 - E.g. IT can enable rule parameters to be changed by business

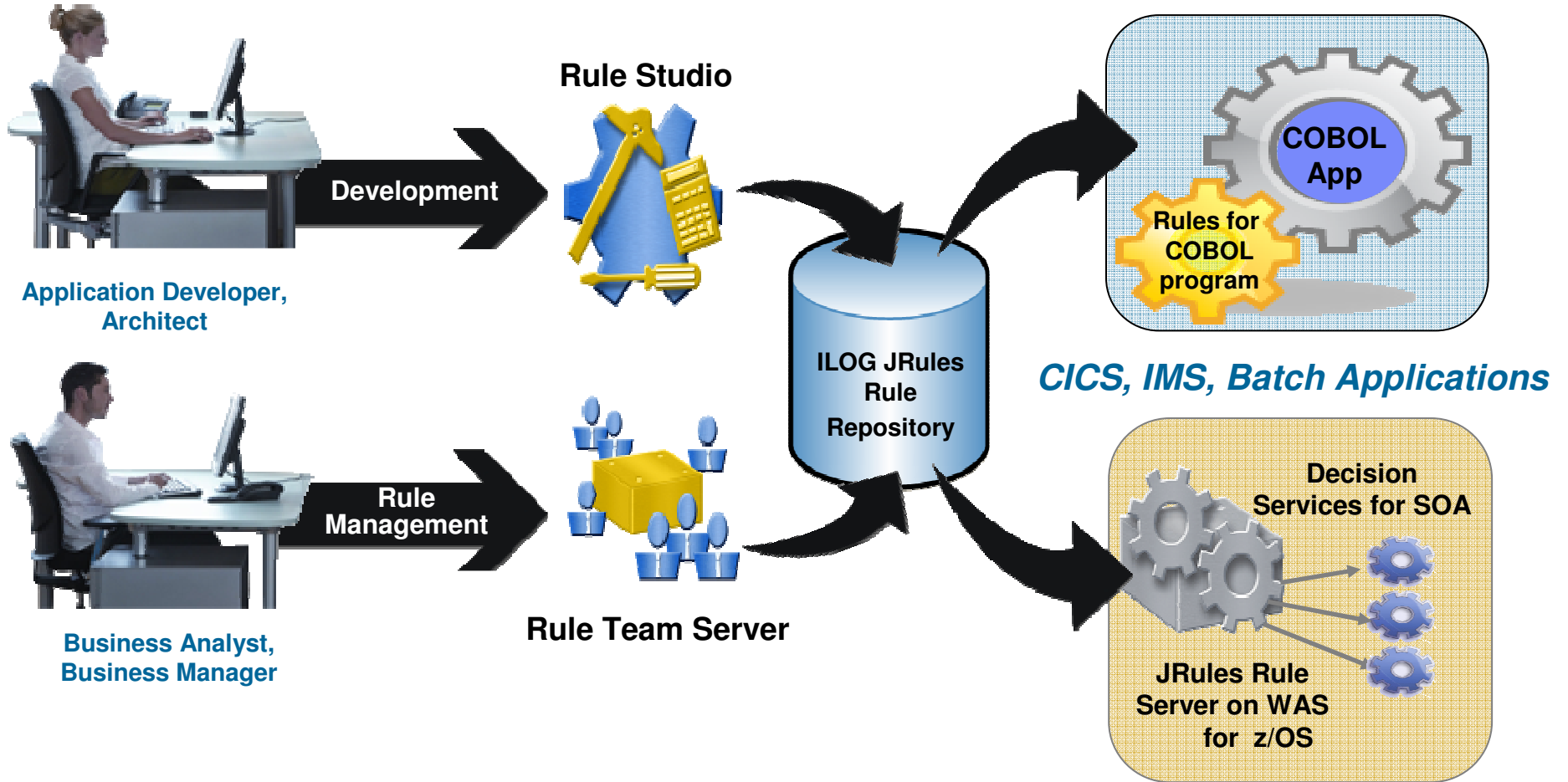
Rule Solutions for Office extends Rule Team Server capabilities

- Provides capabilities to author and change rules using familiar desktop tools



ILOG Business Rule Management Solutions for COBOL Applications on System z

Option 1: ILOG Rules for COBOL



Option 2: JRules Rule Execution Server on z/OS or Linux on System z



WebSphere ILOG BRMS Case Study - Consolidation

Challenge

- There are 6 different COBOL Applications mix of CICS and Batch. Each application contains similar functionality – the applications were included in the company portfolio as part of smaller company purchases.

Solution

Phase 1 - Start with identifying the corporate rules. These will be authored in Rules for COBOL and the generated Corporate rule program will be included in each of the 6 applications.

Phase 2 – Start with Country 1 App – migrate rules to Rules for COBOL and generate required rules program to call with app.

Phase 3 to xx – Continue with each country application but by business decision review each country rules with those already in the repository to determine where more common rules should be.

Concurrent with Phase 3 – Begin the new architecture design and new development for the claims application on distributed.

Business Benefits

- Enhanced use of IT resource time allocated to Application System Maintenance.
- Ability to have an efficient way to phase out duplicate application functionality with no impact to business activities
- Reduction in CPU utilization on System z due to eliminating multiple application systems

Large Multi Product European Insurance Company based



WebSphere ILOG BRMS Case Study - Maintenance

Challenge

- Major Insurance Company needs to increase their subscription to their health insurance online.
- Require flexibility of pricing by the particular market and region.
- Do not want to replace existing COBOL application.
- IT does not want to execute Java on the Mainframe.

Solution

- Author rules to extend COBOL applications to produce business behaviours when new subscriptions are placed
- Business managers can quickly identify and understand what business decisions to change
- Apply changes more frequently/
- Share rules in web and batch application.

Business Benefits

- Make the application evolve over time.
- Recognize the re-appropriation of the application..
- Make it easier, quicker and “safer” to modify the business rules locally.

Major Insurance Company



WebSphere ILOG BRMS Case Study – Rule Sharing

Challenge

- Numerous mainframe COBOL applications with little or no documentation
- Integration/feeds between the mainframe COBOL applications were done as “patch work” and not consistent
- Updates to applications systems require long lead times by lead time

Solution

- Global processes will be the first phases and a BRMS is used in these process to ensure consistency and ease of adding in specific region business rules with new project phases.
 - Distributed solution using JRules BRMS
 - Rules for COBOL used to develop and maintain business object model.
- Involve business users early and through the development process
- Focus on time to market and agility.

Business Benefits

- Decreased Time to Market for new services and new pricings structures
- New technology in phased approach rather than complete rip and replace
 - New and existing applications will need to run in parallel
 - Corporate data will remain on the mainframe
- Employees trained and mentored during the first phases so they can continue with the ongoing development.

*One of the Largest US
Distribution Companies*



BRMS – COBOL Value Proposition

- **Faster Time to Market (New products or changes implemented in days vs. months)**
 - Ability to react to changes in a fast pace competitive marketplace
- **Lower cost of maintenance (Development to Deployment cycles reduced by several orders of magnitude)**
 - Leading to improvement operational efficiency and total cost of ownership
- **Better visibility and control (Business Rules in business language written, monitored and audited by business users)**
 - Leading to improvement to better corporate governance
- **Ability to implement the best rules for the best changes / rules for the best outcome (thru simulation and what if analysis tools)**
 - Business users can see, understand and have the appropriate tools to support the needs of the organization by maximizing their IT investment
- **Other end-result benefits**
 - Ability to manage and document business decisions executed in System Z applications
 - Ability to generate native COBOL from rules within the JRules BRMS
 - Authoring rules for COBOL in business terminology
 - Ability to share business rules with Java and other COBOL applications



Value of BRMS on Mainframes

- **Without a BRMS:**
 - Rules are hidden in COBOL code, databases,...and costly to change
 - Potentially undocumented
 - Programs are versioned...not rules
 - Business is not able to change/review the Rules - only accessible by IT
 - Subject to same life cycle as the code
- **With BRMS automated decisions are:**
 - Changeable/reviewable by Business....when the needs of the business dictate
 - Expressed and documented in business terms
 - Versioned
 - Managed with collaborative web tools
 - Reused across all enterprise applications



Options for Integrating System z Applications with JRules and Rules for COBOL

JRules via Web service	Use CICS support for Web services to make an external call out to a Rule Execution Server	JRules RES on z/OS, RTS on z/OS
JRules via MQ	Use CICS and MQ to make a JMS call out to a Rule Execution Server	JRules RES on z/OS, RTS on z/OS
JRules Java SE engine	Deploy a core JRules rule engine in a CICS JVM and access the rule engine directly with the JRules API	JRules, Engine
JRules Java SE Rule Execution Server	Deploy J2SE rule execution server in a CICS JVM and access via RES API	JRules RES on zOS and RTS on z/OS
Rules for COBOL	Deploy rules as a COBOL sub-program and link-edit this program into your application	Rules for COBOL



ILOG BRMS for System z enable smart organizations to capitalize on modernization and innovation

1

Improve

Improve Agility : author and reuse business decisions and rules across applications with BRMS Rule Studio

2

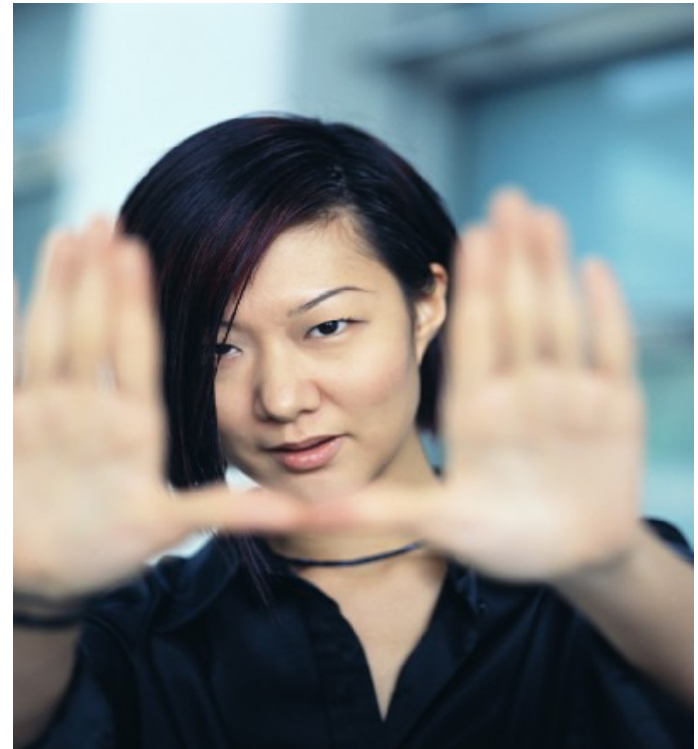
Adapt

Automate business decisions : Quick response to market and regulatory changes with BRMS Rule Team Server

3

Innovate

Add new behaviors to key COBOL business applications and minimize risk and disruption with Rules for COBOL.





IBM Websphere ILOG Resources

- www.ilog.com/brms
BRMS Resource Center -- explore, learn, try
- <http://blogs.ilog.com>
Latest on all ILOG products, technology, and methodology
- <http://www.ilog.com/corporate/training/>
Find worldwide ILOG classes and self-training resources
- <http://www.redbooks.ibm.com/abstracts/redp4589.html?Open>
CICS and ILOG BRMS Redpaper
- **Why Mainframe Podcast Series**