



Managing the decision logic that drives System z business solutions





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?**



IBM Vision at a Glance...

Smarter Planet



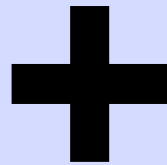
- instrumented
- interconnected
- intelligent
- people
- companies, institutions, industries
- man-made systems
- nature's systems



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

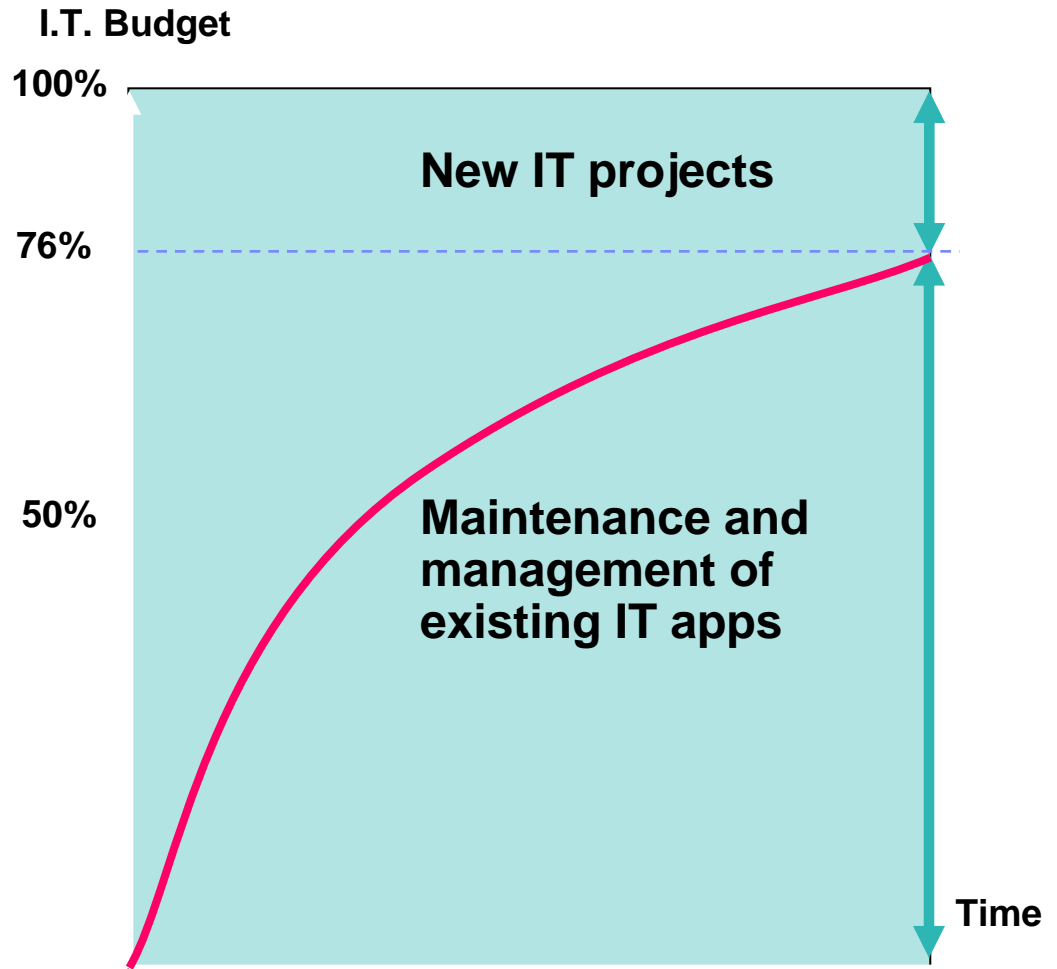
To Survive... To Succeed!



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*



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...

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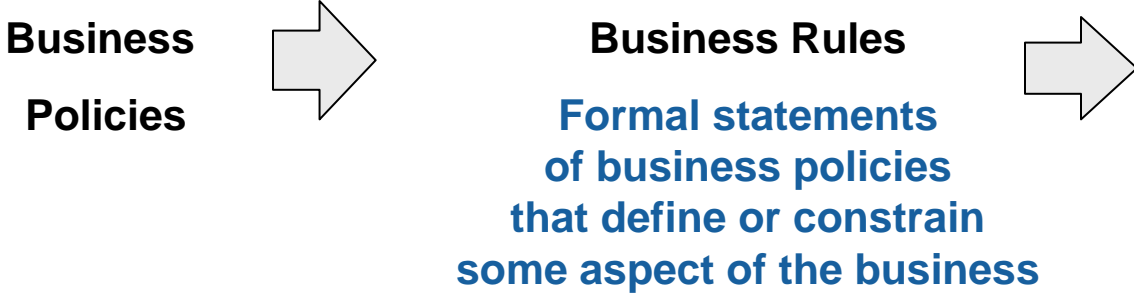
Up-sell/Cross-sell offer
 Commissions / Royalties
 Compliance Screening
 Underwriting Tax calculation
 Billing Fraud assessment Documentation Requirements
 Configuration Accounting Disposition
 Eligibility Pricing Product Selection
 Benefit calculation

Can we automate approvals for this type of order?

And Changing Frequently



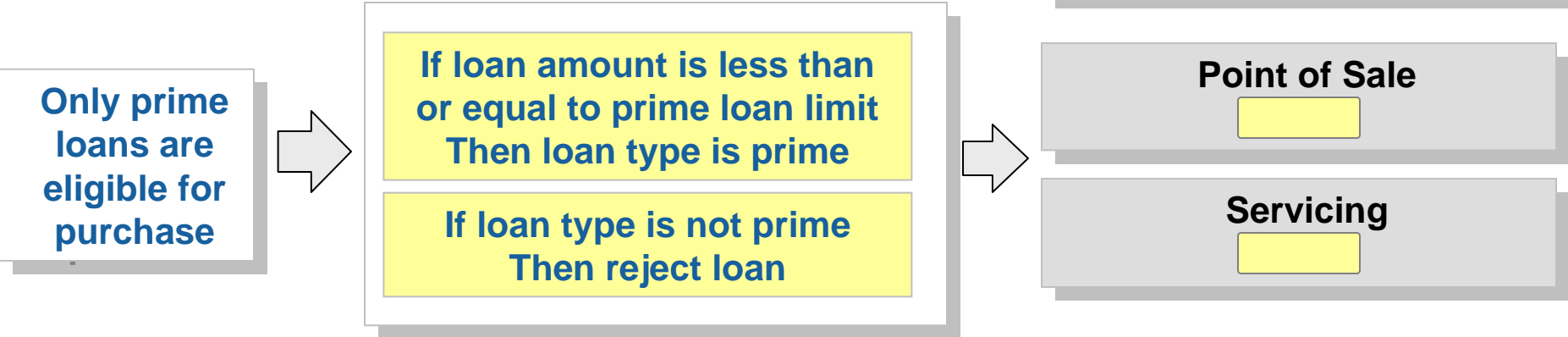
Business Policies and Business Rules



Business Applications

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

Example:





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

```

MIFdef __MCR__
/*
  Before performing any socket operation (like retrieving hostname
  to test_common_variables we have to call WS4Startup
  */
{
  WSADATA Wsadata;
  if (SOCKET_ERROR == WS4Startup (0x0101, &Wsadata))
  /* errors are not read yet, so we use english text here */
  my_message(ER_MVAS_FAILED, "WS4Startup failed", MIF00);
  wsireg_abort();
}
}
#endif /* __MCR__ */

if (test_common_variables(MYSQL_CONFIG_NAME,
                        argv, load_default_groups))
  wsireg_abort(); // will do exit
test_signals();
if (Tcapt_specialFlag & SPECIAL_NO_PRIOB)
  my_thread_setprio(pthread_self(), CONNECT_PRIOB);

```

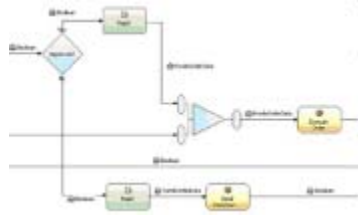
Applications



Documents



People



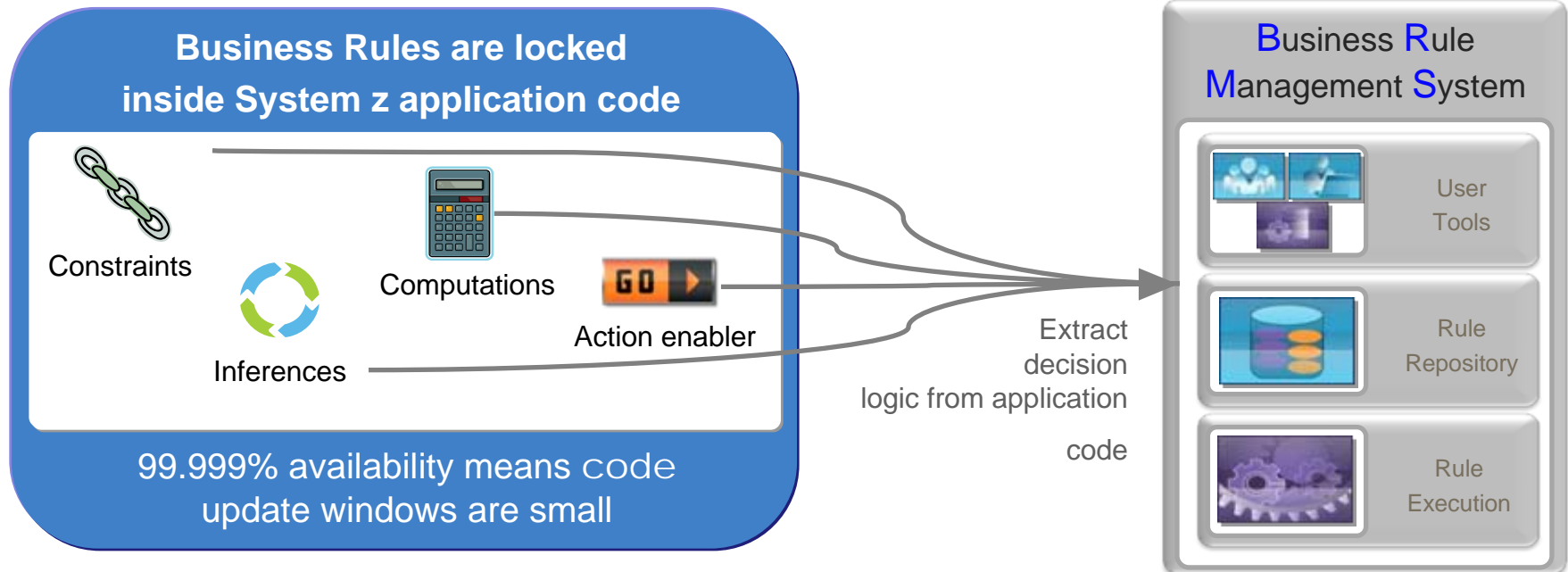
Processes

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)

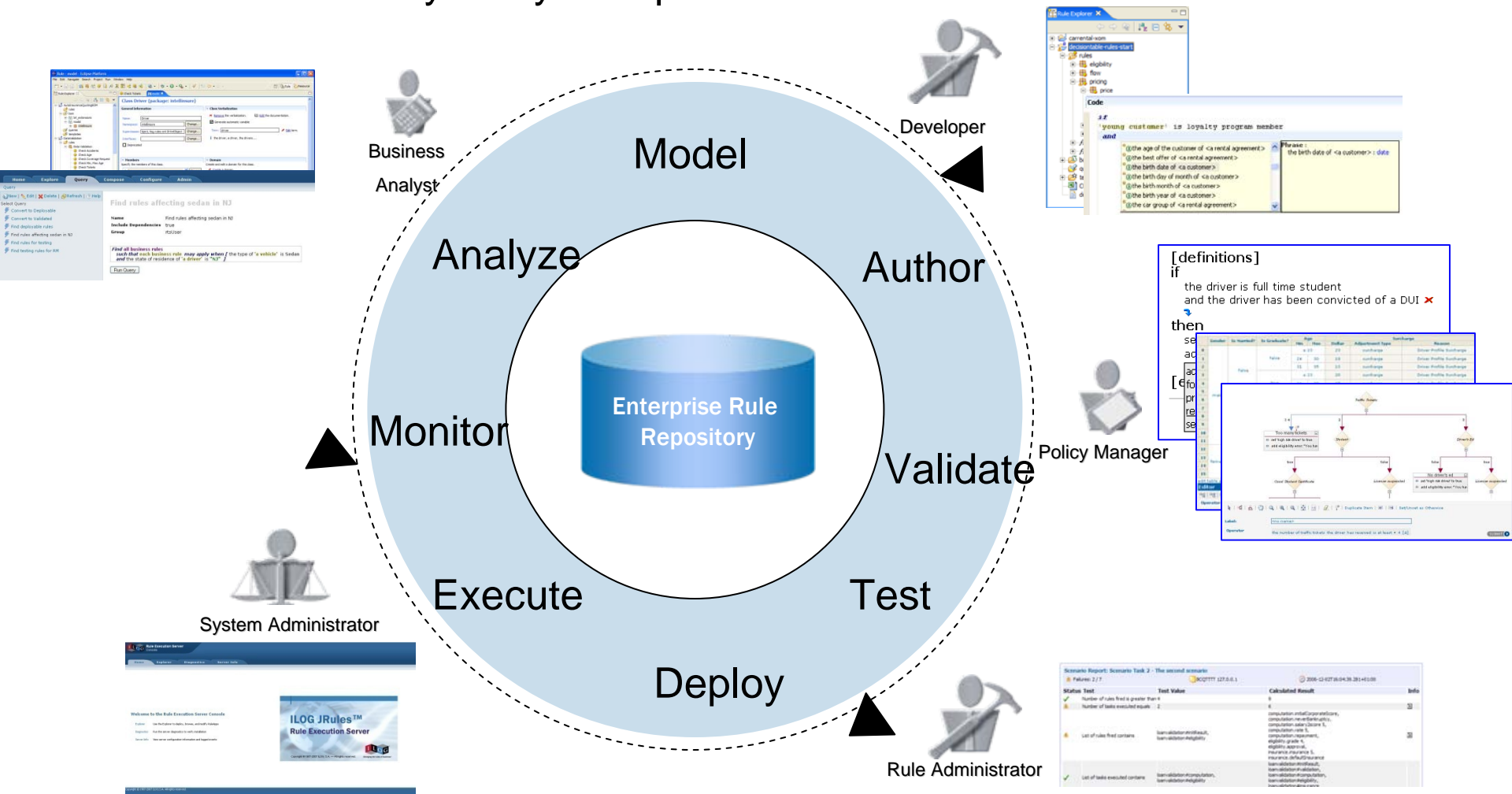


- **Adapt faster to ongoing change requirements**
 - Respond to customer and industry demands by deploying rule changes independently from lengthy application maintenance cycles
- **Reduce load on IT development**
 - Express decision logic in business language terms to enable your business experts to 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



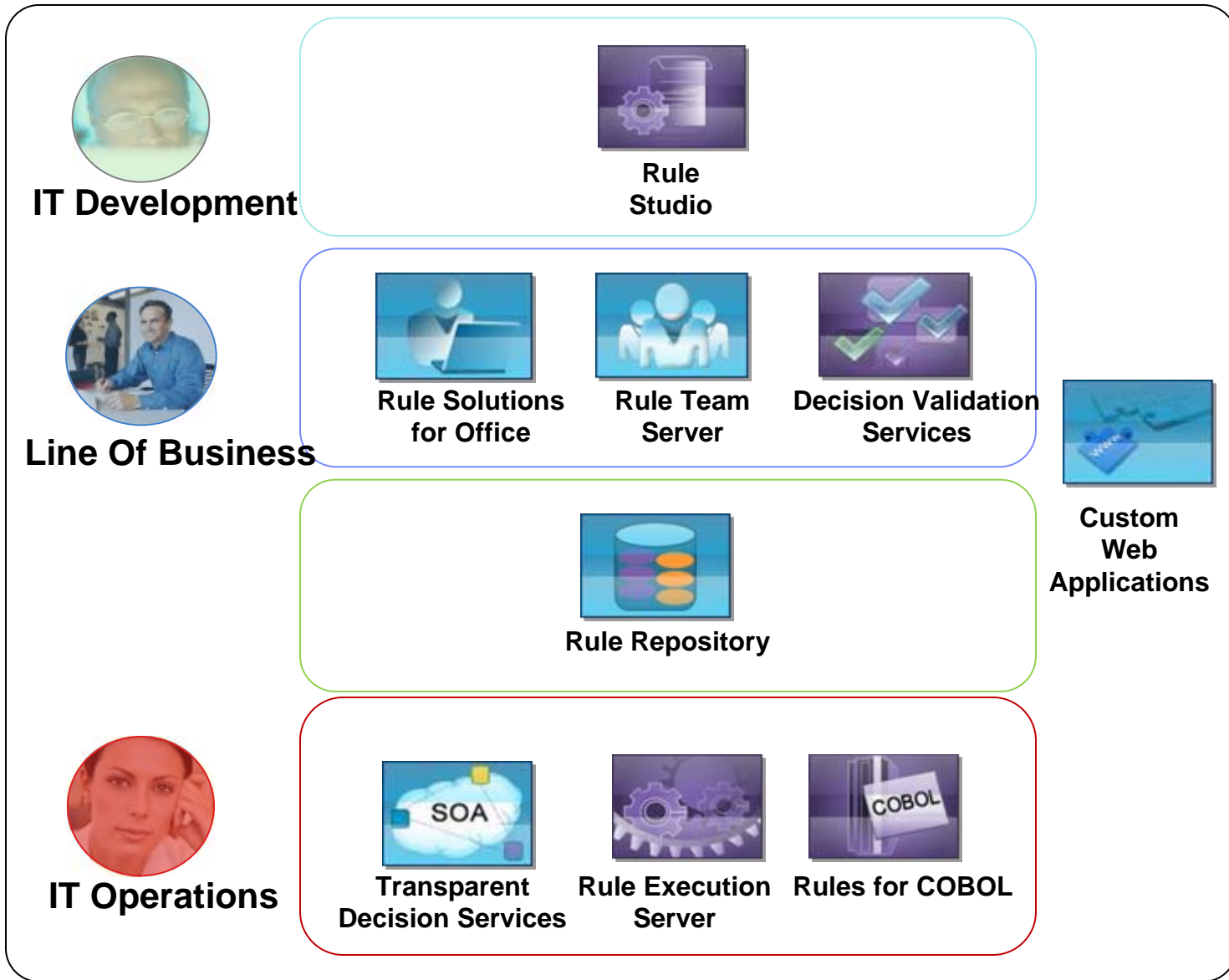
Business Analyst

Benefits for my role:

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



WebSphere ILOG JRules BRMS



Design

Maintain

Share

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] vehicle, reason: ▼ <enter a value> [a]

Point & Click

Coupe
 Pickup Truck
 Sedan
 Sport Utility Vehicle
 Sports Coupe

	Gender	Is Married?	Is Graduate?	Age		Dollar	Adjustment Type	Surcharge	Reason
				Min	Max				
0				≤ 23		23	surcharge		Driver Profile Surcharge
1			false	24	30	18	surcharge		Driver Profile Surcharge
2		false		31	35	15	surcharge		Driver Profile Surcharge
3				≤ 23					Driver Profile Surcharge
4			true	24	30				Driver Profile Surcharge
5	male			31	35				Driver Profile Surcharge
6				≤ 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

Decision Tables

Editor
 Operator the age of the driver is at most ▼ 21 [a]

Attribute	Range	Weight(%)	Score	Reason Code
Months since last bankruptcy	1 & Months since last bankruptcy < 3	100	0	NLR
	3 & Months since last bankruptcy < 6		20	NLR
Number of Bankruptcies	1 & Number of Bankruptcies < 2	30	100	
	2 & Number of Bankruptcies < 3		50	
Number of Foreclosures	1 & Number of Foreclosures < 2	20	100	NR
	2 & Number of Foreclosures < 3		10	
Number of 30 days Late Payment	1 & Number of 30 days Late Payment < 3	9	100	
	3 & Number of 30 days Late Payment < 7		10	SLP
Number of 60 days Late Payment	1 & Number of 60 days Late Payment < 3	15	100	
	3 & Number of 60 days Late Payment < 7		50	

Scorecards

Decision Trees

```

    graph TD
        Root(( )) --> Tickets{Tickets}
        Tickets --> TooMany[Too many tickets]
        Tickets --> Good{Good Student Certificate}
        Tickets --> Suspended{License suspended}
        TooMany --> SetHighRisk[set 'high risk driver' to true]
        TooMany --> AddEligibility[add eligibility error 'You ha...']
        Suspended --> NoDriver[No driver's ed]
        Suspended --> LicenseSuspended[License suspended]
        NoDriver --> SetHighRisk2[set 'high risk driver' to true]
        NoDriver --> AddEligibility2[add eligibility error 'You ha...']
    
```

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



Rules Authoring Delivered to Business

Excel Window: Eligibility.xlsx - Microsoft Excel

Decision Table: Check Customer Age

	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 rent	
4	New Hampshire	X	23	70	TRUE	The customer is eligible to rent in New Hampshire
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 rent	
7	Rhode Island	A	21	70	TRUE	The customer is eligible to rent in Rhode Island
8			≥ 71.00	FALSE	The customer's age is past the maximum for rent	

Word Window: Word Tutorial - copied.docx - Microsoft Word

Business Rule: The following business rule defines the price of the Default Special Offer. The price is computed from the base price of the offer.

RuleDoc Outline:

- Compute the Base Rate
- Check the Eligibility for the Default
- Define the Pricing of the Default
- Check the Eligibility for the Long Term
- Define the Pricing of the Long Term

Rule Properties:

Problem List:

- The word "true" is expected in place



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

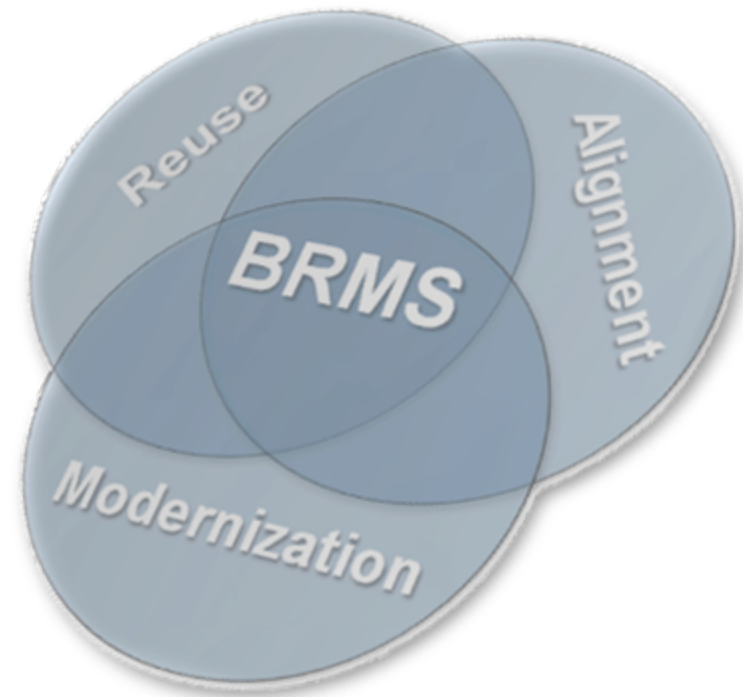


Manage rule based decisions

Manage rule based decisions

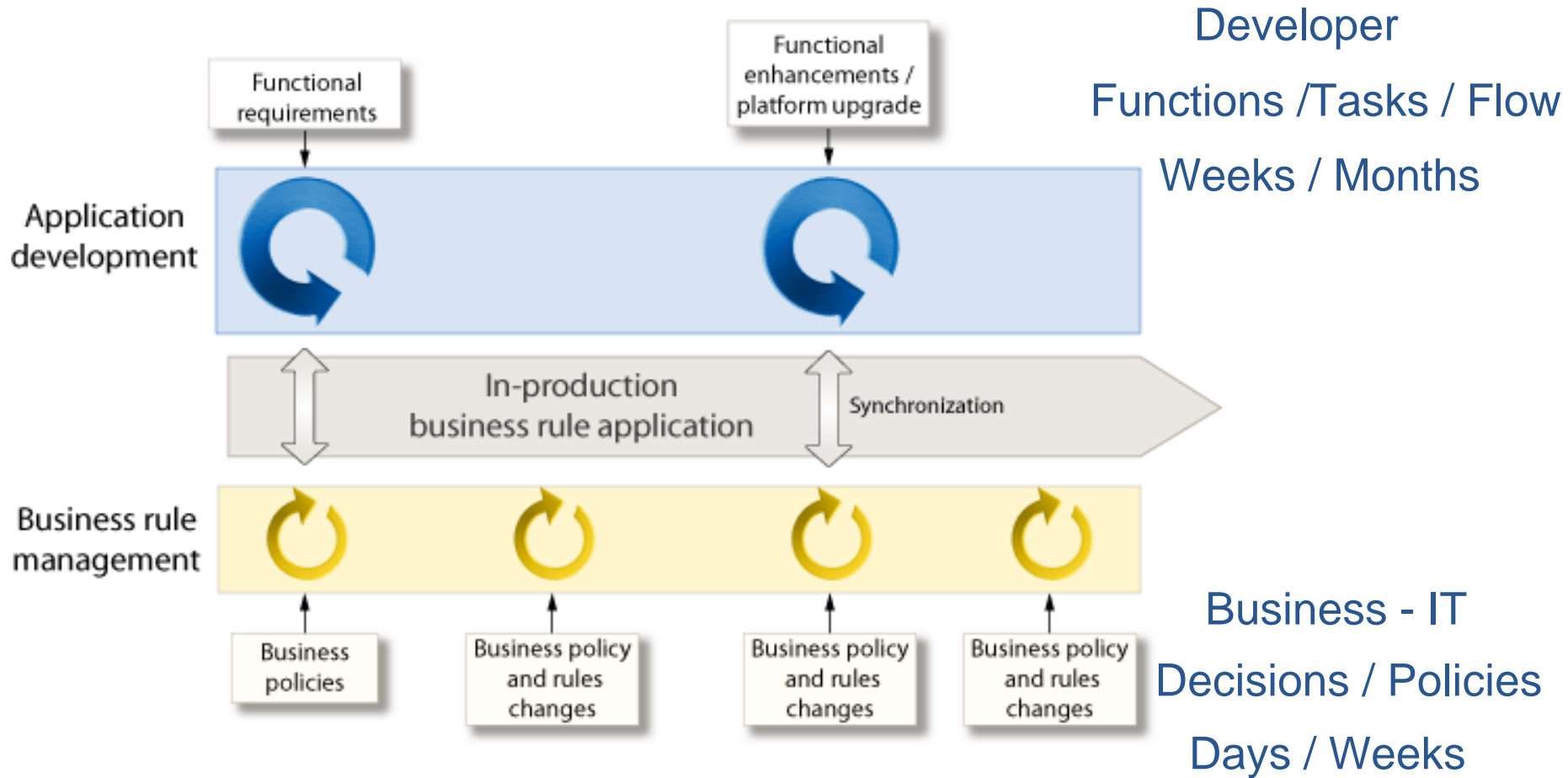
ILOG BRMS is *the IBM technology* for creating, maintaining and implementing decision services...

- 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





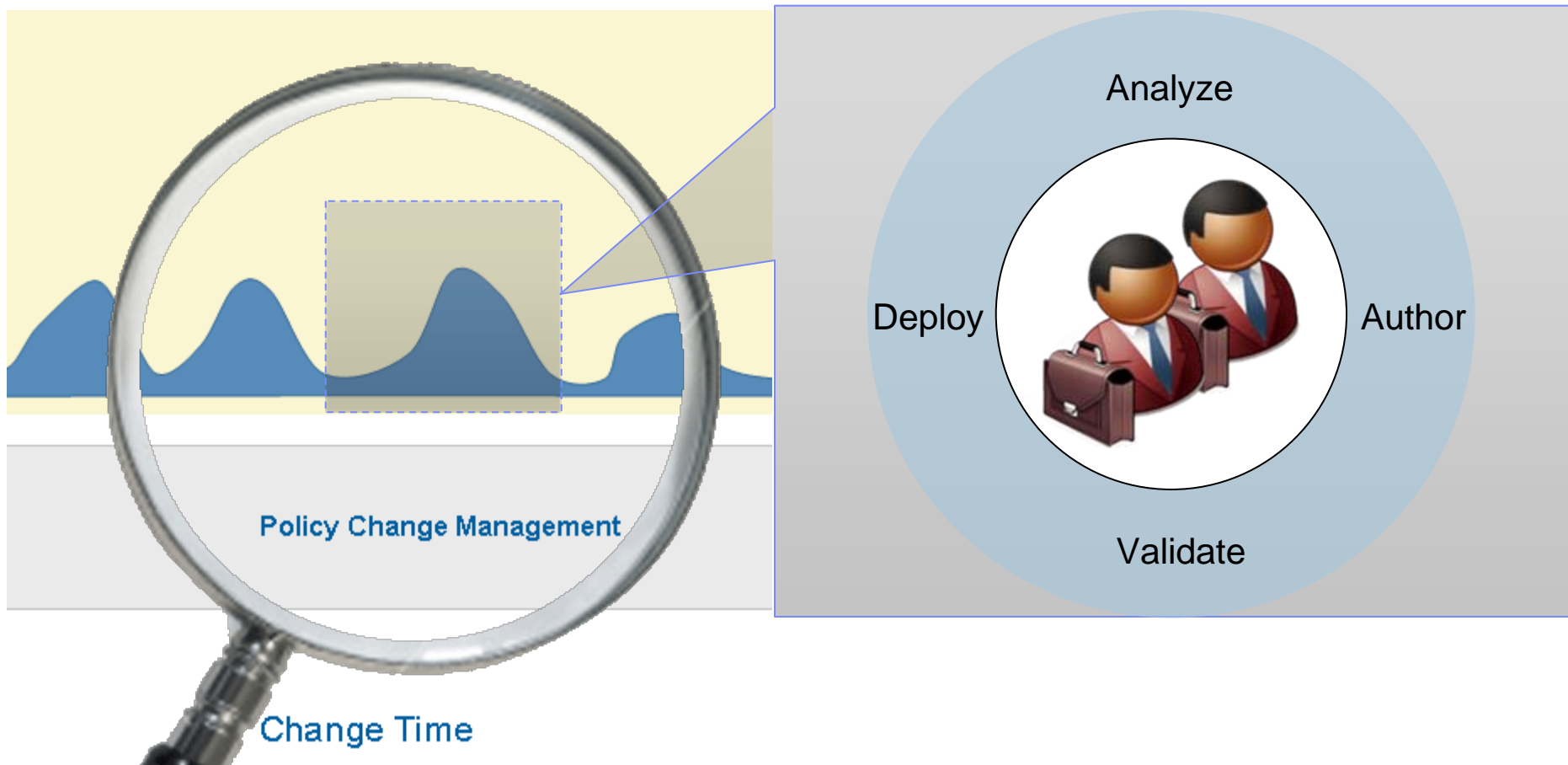
Redefined Application Change Cycle





Making the change process Easy, Safe and Predictable

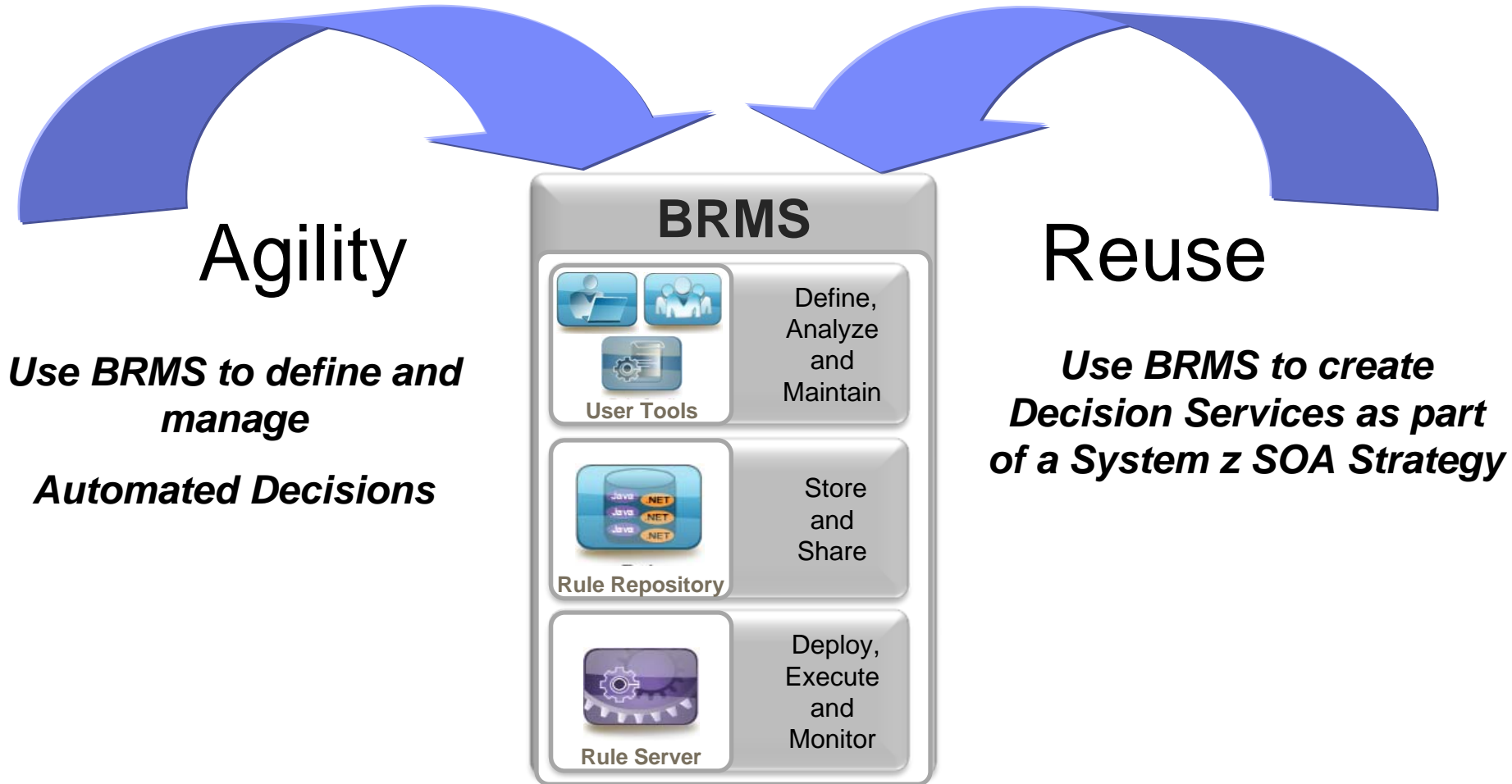
Business Rule Maintenance Lifecycle





Value of BRMS on System z

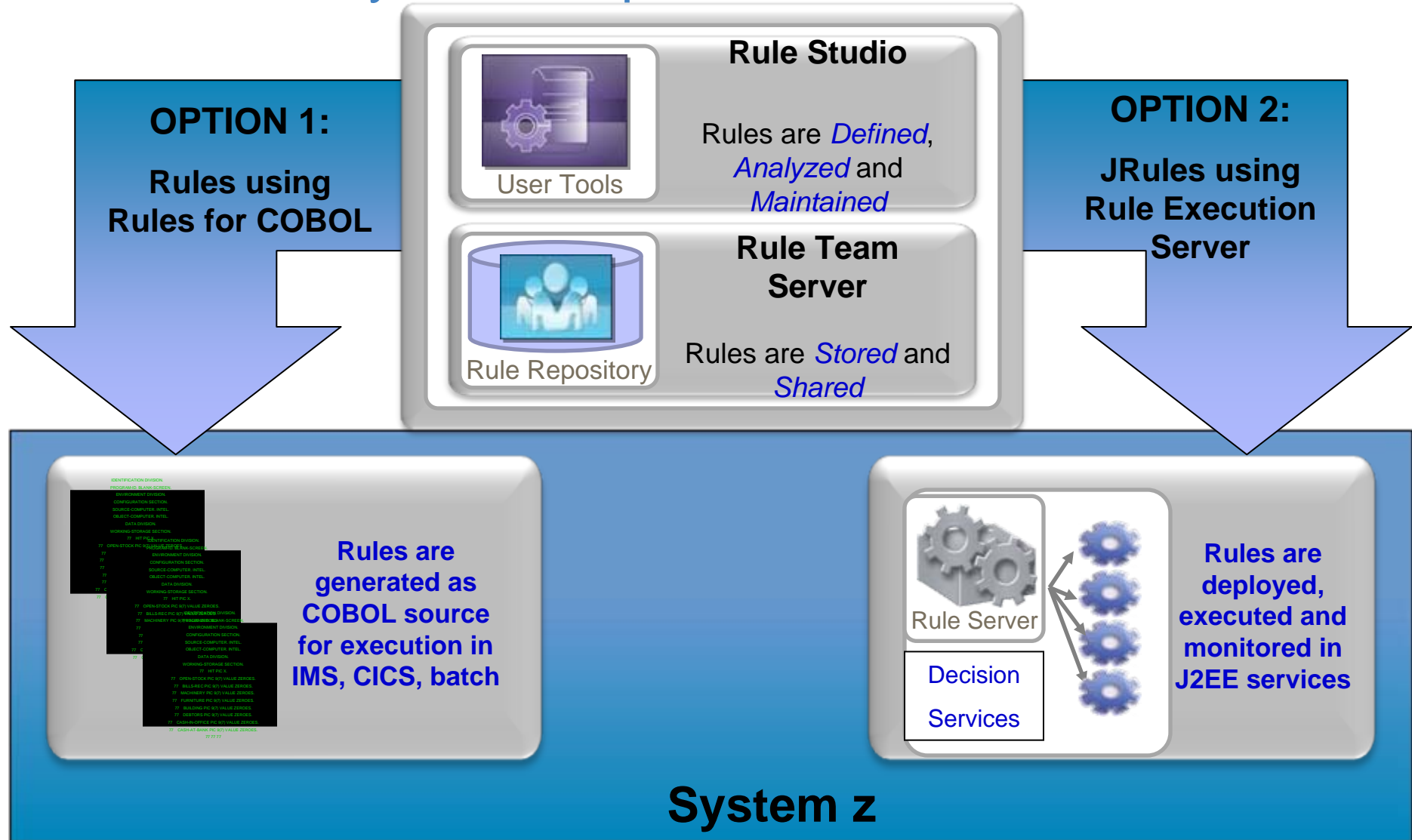
ILOG's BRMS manages the business logic in a form that is EASILY readable, manageable and changeable





Manage rule based decisions

ILOG BRMS System z Options





Manage rule based decisions



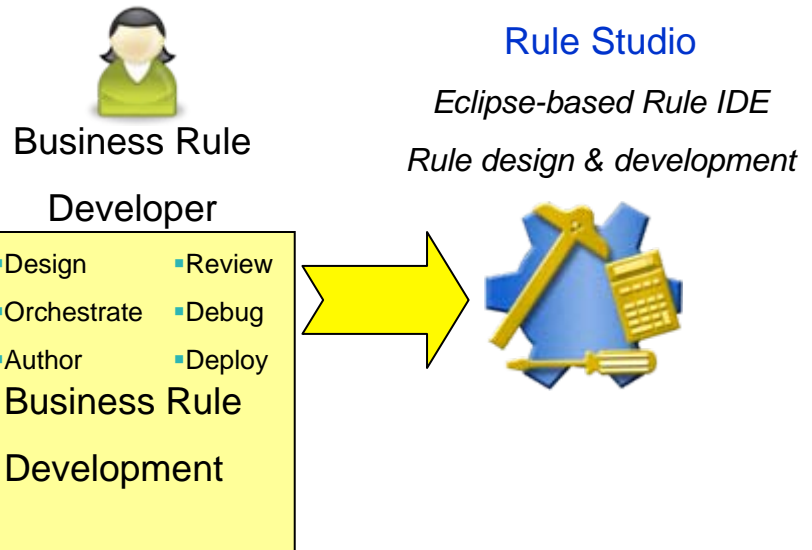
Improve Agility

Challenge

Marketing VP needs to react to change to market in a timely manner but new offers take a long time to introduce because of an IT backlog and systems very difficult to work with.

Solution

- Author rules to extend CICS COBOL applications to produce business behaviours when new orders are placed
- Business managers can quickly identify and understand what business decisions to change
- Simplifies modernization by introducing change in a single place
- minimize risk and disruption.



Business Value

Timely modification of offers to increasing competitive edge
Reduced risk, cost and time to implement change



Manage rule based decisions

Adapt to Accelerate Time to Market

Challenge

LOB needs to adjust credit rules to reduce business risk of a lending application.

Solution

- LOB users make rules adjustments in Rule Team Server and deploy changes to CICS applications
- Avoid and application change cycle.
- Puts LOB in control of the business changes

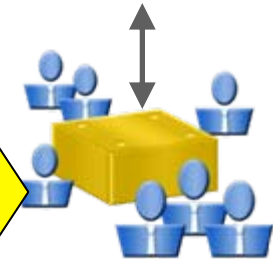
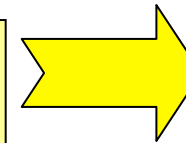


Business

Professional

- Author
- Review
- Deploy

Business Rule
Management



Rule Team Server

Web-based console for
Rule Maintenance

Business Value

Immediately reduces risk with a auditable change management process

Manage rule based decisions

Innovate by incremental modernizing applications

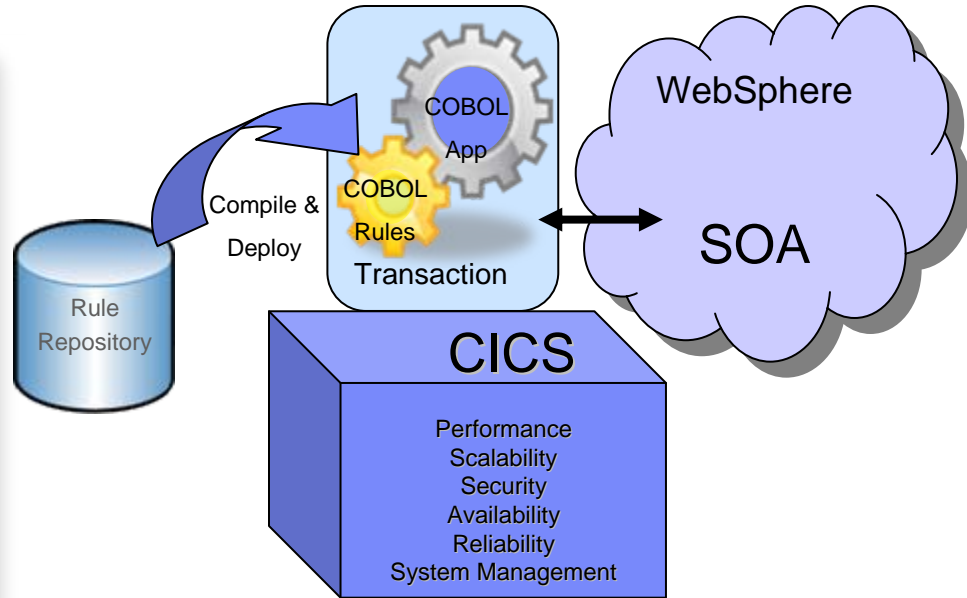
Challenge

IT Executives

Reduce the load on staff from LOB requests to change systems behavior. Needs to reduce cost of application maintenance and meet SLAs.

Solution

Incrementally modernize CICS applications with a phased approach to externalizing business logic with focus on bridging to SOA.



Business Value

- Compliment SOA roll out across solutions and simplifies modernization by introducing change in a single place
- Reduced risk, cost and time to implement change in proven applications



Incremental application modernization

Incremental application modernization

- Faster turnaround of business rule changes with rule-based application management
- Seamless legacy-to-rules migration
- Closes Knowledge Gap
- Controlled Migration Path to Modernized z Architecture





Manage rule based decisions

ILOG BRMS Is a Path to Application Modernization

Sample Business Rule Modernization Plan

- Phase 1 - Start with identifying the corporate rules.
- Phase 2 – Start with Country 1 App – Author rules in JRules.
- Phase 3 to x – Continue with each country application but by business decision review each country rules





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 z/OS 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



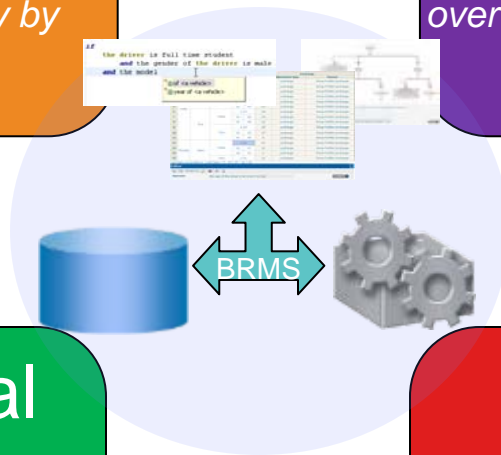
Benefits of WebSphere ILOG BRMS

Reduced lead times for changes

Fast, reliable updates of customer loyalty offers, deployed directly by business users (retail)

More personalized client interactions

Automated, interactive screening for over 40 different government programs (local government)



Internal/external compliance

Support of regulations that vary by customer location and product line (insurance)

Business – IT alignment

Business user control of rules reduced new policy implementation by 50% (pension administration)



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