

Powering Dynamic Business Processes with ILOG BRMS



Proactively align stakeholders to business process goals, objectives, and performance



Business Leader



Manage and Monitor in multiple environments



Business Analyst



Modify rules, policies and processes



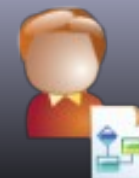
Business User



Review KPIs, manage task lists and staff productivity

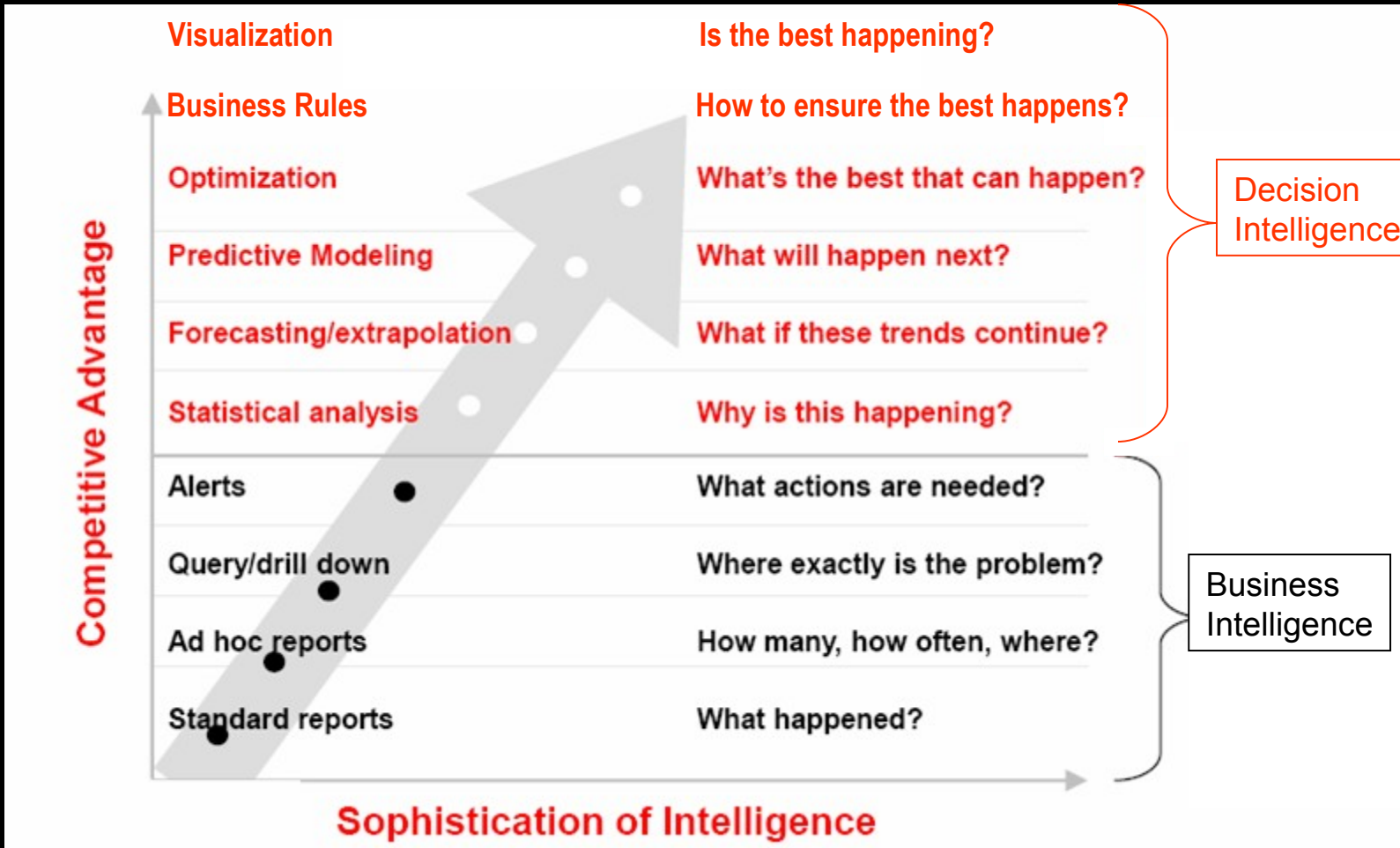


Process Owner



Analyze metrics, optimize process models and dashboards

Business Intelligence + Decision Intelligence



Source: SAS/Accenture

ILOG Lines of Business

Expanded Value for IBM Customers

Powerful Business Rule Management System

Adapt and respond dynamically, automating process-based decisions with business rule management



Innovative Suite of Optimization Tools

Produce the best possible action plans & schedules, enhancing abilities to explore alternatives, understand trade-offs, and respond to changes in business operations

Supply Chain Management

Optimize supply chains, design & planning tools for improved efficiency and productivity

Visualization Tools

Transform insight into action, enhancing collaboration for smarter role-based business decisions

What is Optimization?

Categories of Economic Analysis		
	TYPICAL FREQUENCY	EXAMPLES
LONG-TERM PLANNING	<ul style="list-style-type: none"> • Annual • Quarterly • Occasional 	<ul style="list-style-type: none"> • Whether to expand a plant or open a new one • How many distribution centers to have • What's the value of additional equipment over time
SHORT-TERM PLANNING	<ul style="list-style-type: none"> • Monthly • Weekly 	<ul style="list-style-type: none"> • How much should we produce this week • How many shifts should we have • How many resources will we need • Which marketing campaigns will provide the most impact for a set budget
DETAILED SCHEDULING	<ul style="list-style-type: none"> • Weekly • Daily • Hourly 	<ul style="list-style-type: none"> • Which activity should be done when • Which resource should be assigned when • When can maintenance or any special task be most efficiently scheduled

Transportation Planning at Michelin

Situation

World's second largest tire manufacturer

\$150+M/year transportation budget

Needed to manage **hubs**, driver assignments, & **for-hire vs. private fleet** decisions

300 dealers, 15000 orders/month, **1000 trucks**

Results analyzed by 100 planners every morning, feeding 1500 users

Benefits

Saved several % off transportation budget

Improved supply/demand match while increasing service levels

Better planning granularity - **¼ hour**

Better able to **foresee bottlenecks and transports**

Staff able to **manage more orders**



Production Scheduling at Nissan

Situation

Sunderland, UK was **already Europe's most efficient** car production facility at the time

Asked to support a **3rd car model**

Wanted to accomplish this without building **3rd production line**

Benefits

Able to produce the **3rd model on the existing two lines** with improved Detailed Scheduling system built by ILOG PS

Increased capacity (potential production) by 30%

Schedule adherence increased to 90%



Industry Applications

Retail and Healthcare

- Product configuration
- Space management
- Pricing & promotions optimization
- Workforce scheduling
- Marketing campaign optimization

Financial Services

- Portfolio optimization and rebalancing
- Portfolio in-kinding
- Trade crossing
- Loan pooling
- Product/price recommendations

Transportation & Logistics

- Depot/warehouse location
- Fleet assignment
- Network design
- Vehicle routing & scheduling
- Vehicle & container loading
- Crew & driver scheduling
- Maintenance scheduling

Manufacturing

- Plant location
- Plant layout
- Supply chain management
- Production planning
- Detailed scheduling
- Combinatorial auctions for procurement

Utilities, Energy & Natural Resources

- Supply portfolio planning
- Power generator scheduling
- Distribution planning
- Water reservoir management
- Mine operations
- Timber harvesting

Telecom

- Network capacity planning
- Routing
- Adaptive network configuration
- Antenna and concentrator location
- Equipment and service configuration
- Field technician dispatching

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ILOG BRMS Benefits



Implementing change in a way that is easy, safe and predictable



Reducing the time and cost required to develop and maintain operational systems that are affected by change



Providing a way for IT and Business functions to work collaboratively on defining and updating the decision logic that drives operational systems



Increasing the visibility of how systems use and are affected by decision logic

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.

- Commissions / Royalties
- Underwriting
- Tax calculation
- Up-sell/Cross-sell offer
- Compliance Screening
- 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

Traditional Approach for Managing Change

Decisions used in operations = “business rules”

Derived from organizational policies, procedures and internal/external regulations

For operational systems, business rules are usually contained within application code, although they can also be in documentation or the knowledge of employees

Where Business Rules Typically Exist

```

#ifdef __WIN__
/*
 * Before performing any socket operation (like retrieving hostname)
 * in init_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_WSAS_FAILED, "WSASStartup Failed", MYF(0));
    unireg_abort(1);
  }
}
#endif /* __WIN__ */

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

init_signals();
if (!Opt_specialflag & SPECIAL_NO_PRIOR)
  my_thread_setprio(pthread_self(),CONNECT_PRIOR);
    
```

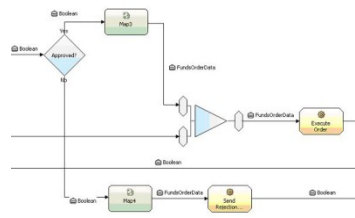
Applications



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

Easy, Fast, Reliable Change with BRMS

```

if
  all of the following conditions are true :
    - the age of the driver is between 18 and 21
    - the number of accidents the driver has been involved is at least 1
    - the number of traffic tickets the driver has received is at least 1
then
  add a $ 8 surcharge to 'Auto Quote Response' , reason: "Young driver surcharge" ;

```

Business Rule Management System

Where Business Rules Typically Exist

```

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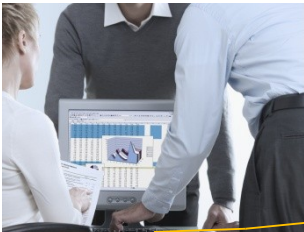
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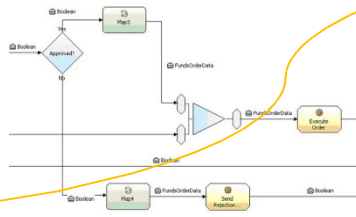
Applications



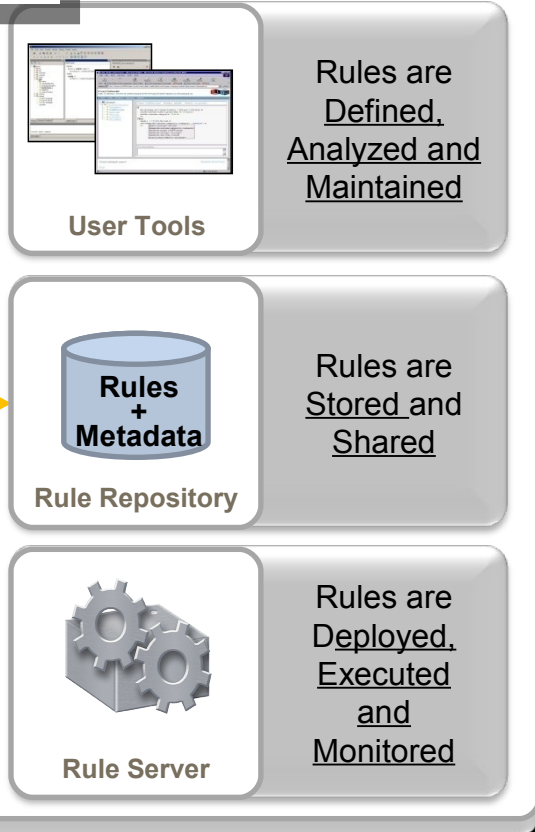
Documents



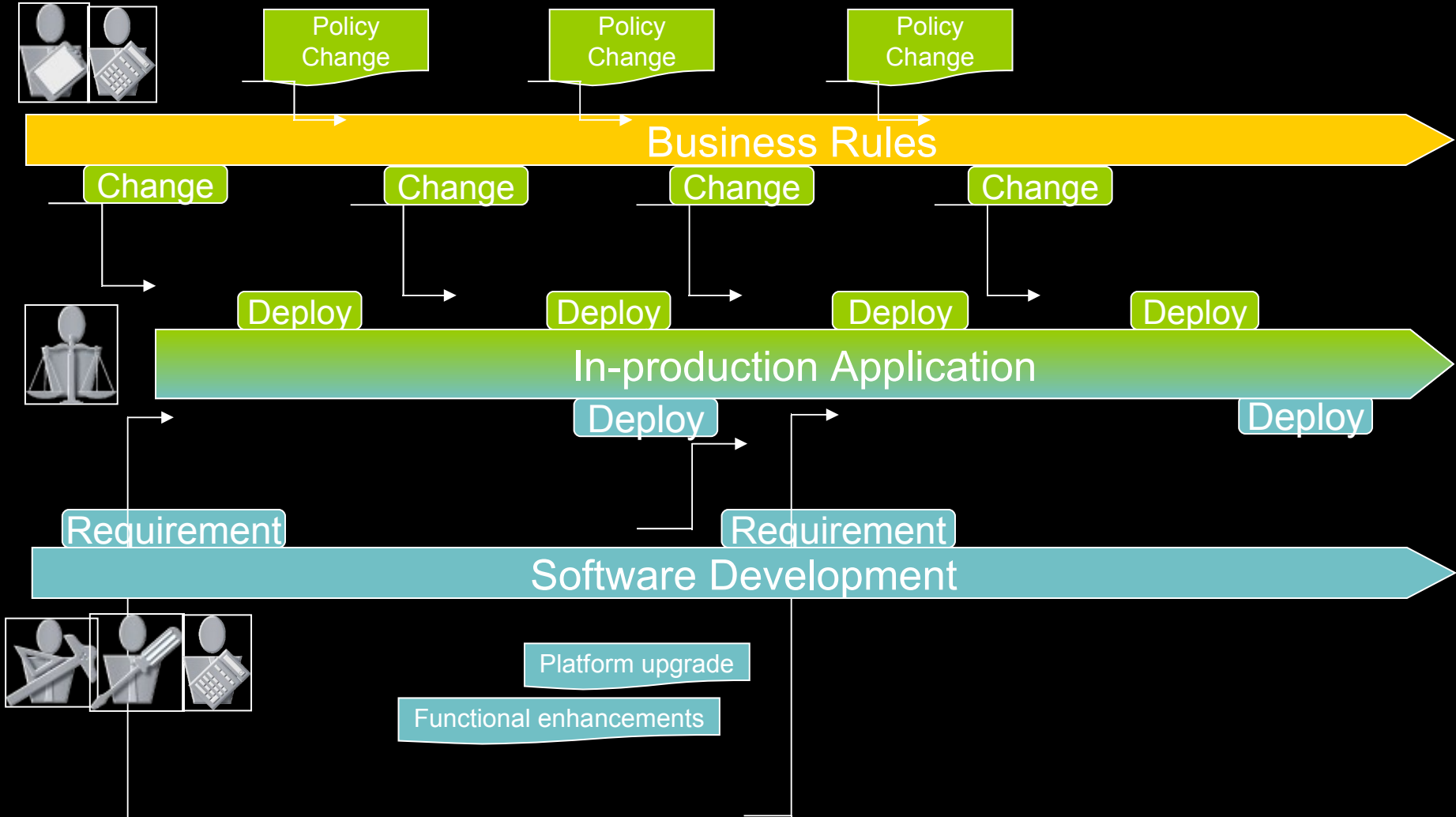
People



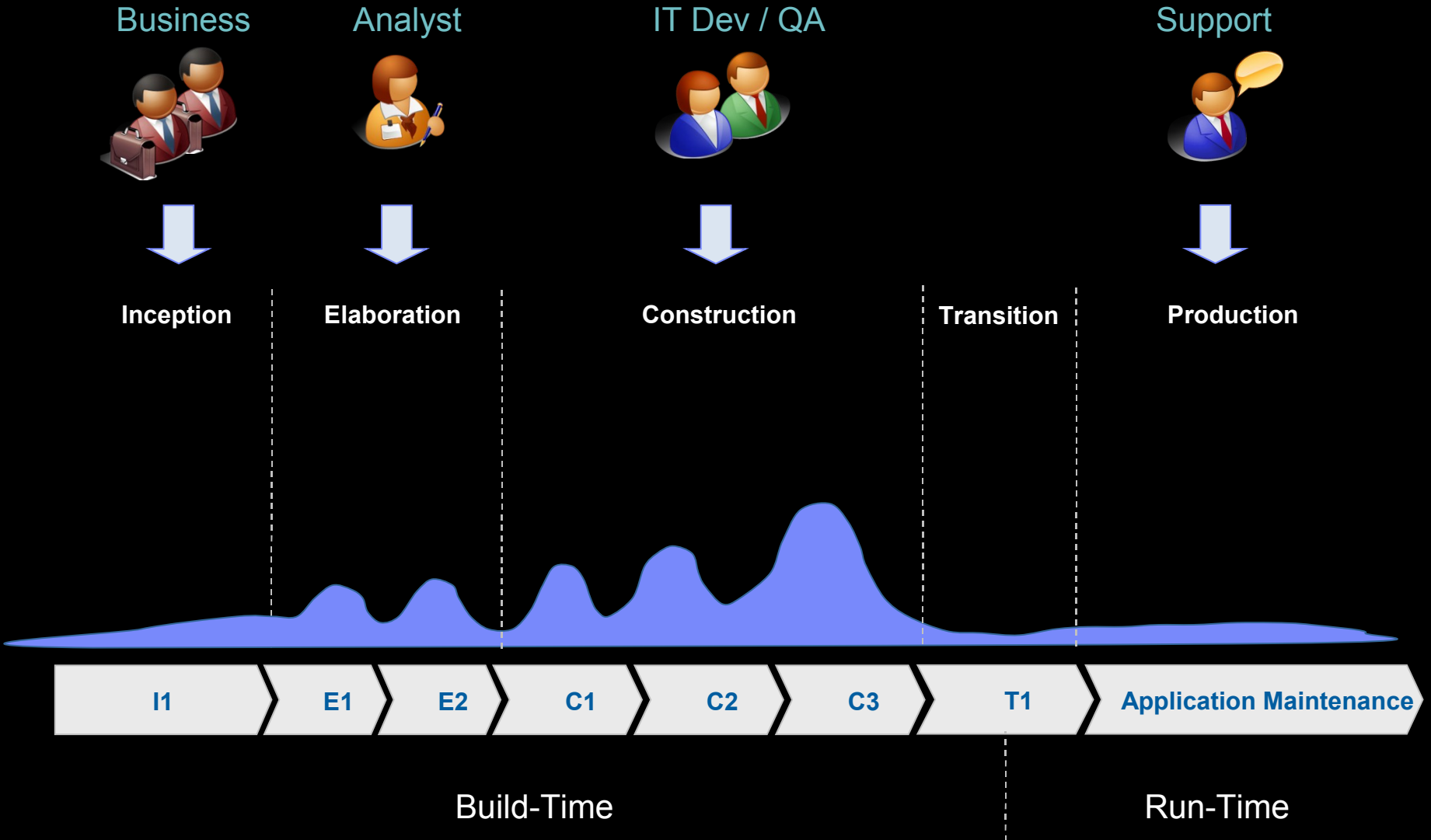
Processes



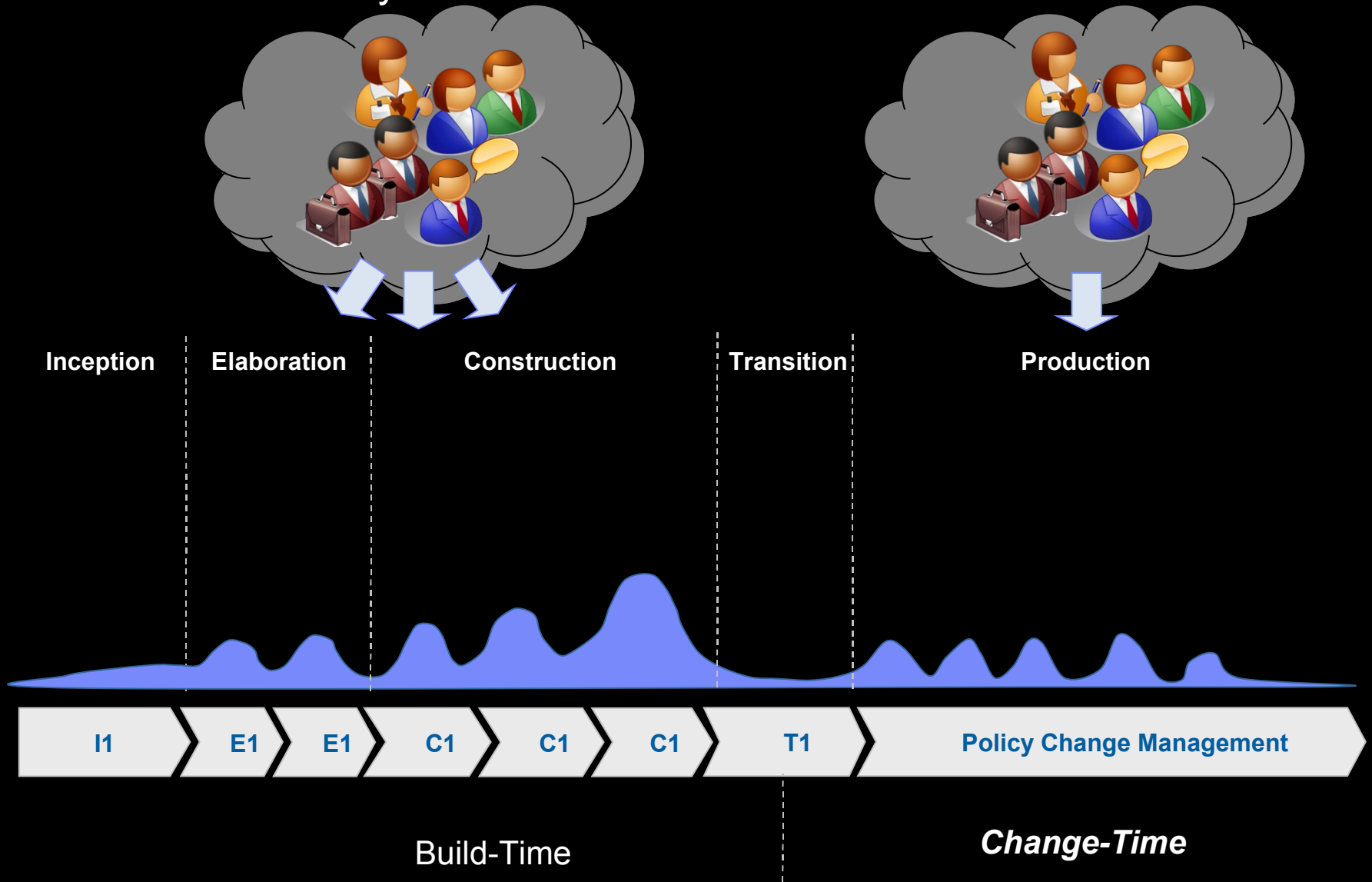
Operational Change Management



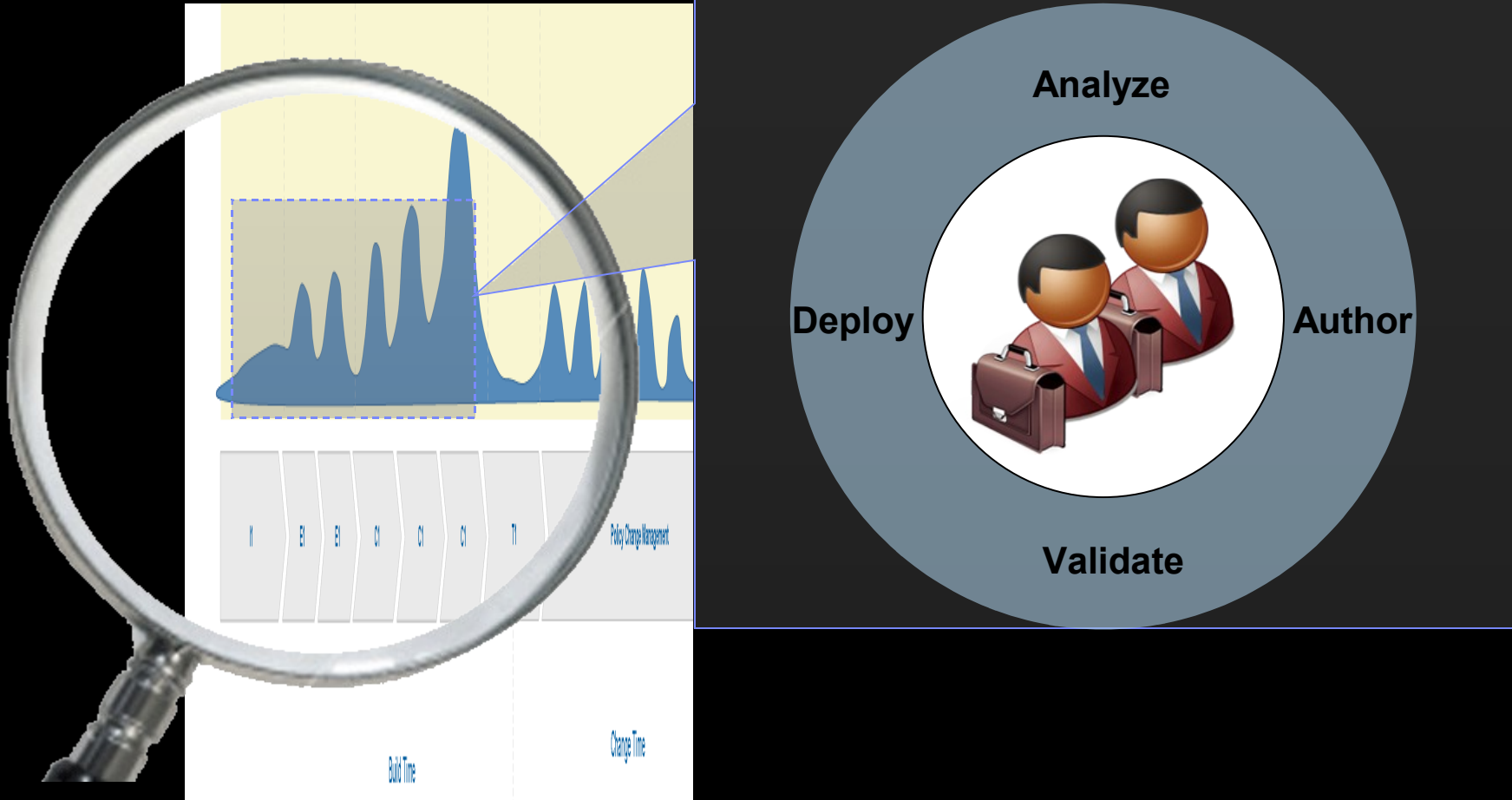
Traditional Software Lifecycle



BRMS Software Lifecycle



Business Rule Maintenance Lifecycle

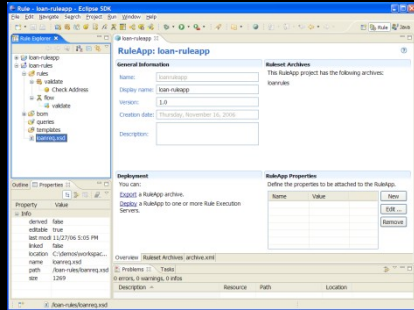


JRules Product Components



Technical Environment

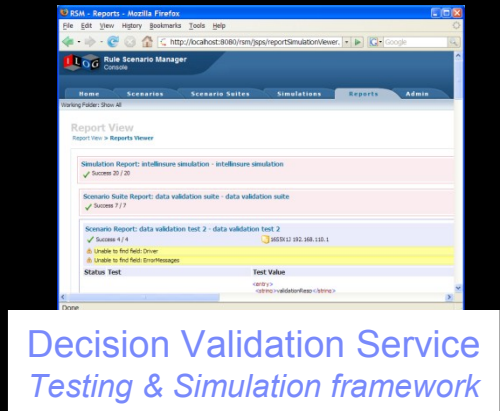
Business Environment



Rule Studio
Eclipse-based Rule IDE
Rule Service design & development



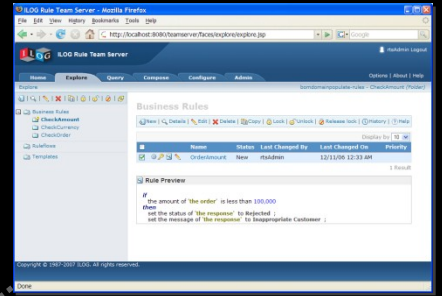
Rule Developer



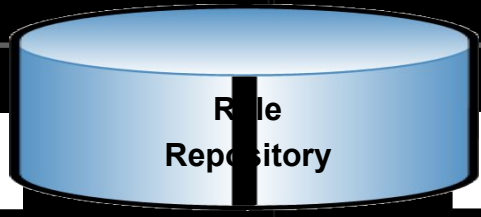
Decision Validation Service
Testing & Simulation framework



Rule Manager



Rule Team Server
Web-based Application for Rule Maintenance



Rule Repository

Deploy rules

Deploy rules

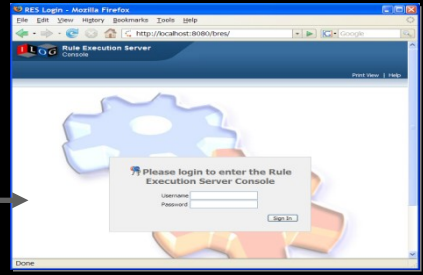
Production Environment



System Administrator



Rule Execution Server
Single node or cluster
(J2SE & J2EE compliant)



Web-based console to monitor & control rule execution

RSM - Simulations

Report View
Report View > Reports Viewer

Simulation Report: Suite 1.0 vs Suite 2.0 - Compares releases 1.0 and 2.0
Success 10 / 10

Comparison of Monthly Payments between existing (baseline) and new (challenger) rules

Month	Baseline	Total Cost: \$160000.0	Challenger	Total Cost: \$230000.0
01/07	\$10000.0		\$10000.0	
02/07	\$18000.0		\$28000.0	
03/07	\$23000.0		\$38000.0	
04/07	\$28000.0		\$48000.0	
05/07	\$20500.0		\$33000.0	
06/07	\$10500.0		\$8000.0	
07/07	\$10000.0		\$10000.0	
08/07	\$11500.0		\$14000.0	

Report View
Report View > Reports Viewer

Scenario Report: PPV01 version 1.0 - Processing of a PPV license type
Success 3 / 3 BH67C1 172.22.10.21 2007-05-22T14:42:15.522-08:00

Status	Test	Test Value	Calculated Result	Info
✓	Duration of execution is less than	20	16	
✓	List of rules fired contains	Common Rules.Compute base amount, PPV.Compute Download Surcharge, Split Rules.SOD Rights	Common Rules.Compute base amount, Common Rules.Compute base amount, PPV.Compute Download Surcharge, PPV.Compute Download Surcharge, Split Rules.Copy of Copy of SOD Rights, Split Rules.Copy of Copy of SOD Rights, Split Rules.Copy of SOD Rights, Split Rules.Copy of SOD Rights, Split Rules.SOD Rights, Split Rules.SOD Rights	
✓	List of tasks executed contains and matches order	main flow#PPV, main flow#Split	main flow#PPV, main flow#Split, main flow#Apply Split, main flow	

Output Parameters: XML, HTML

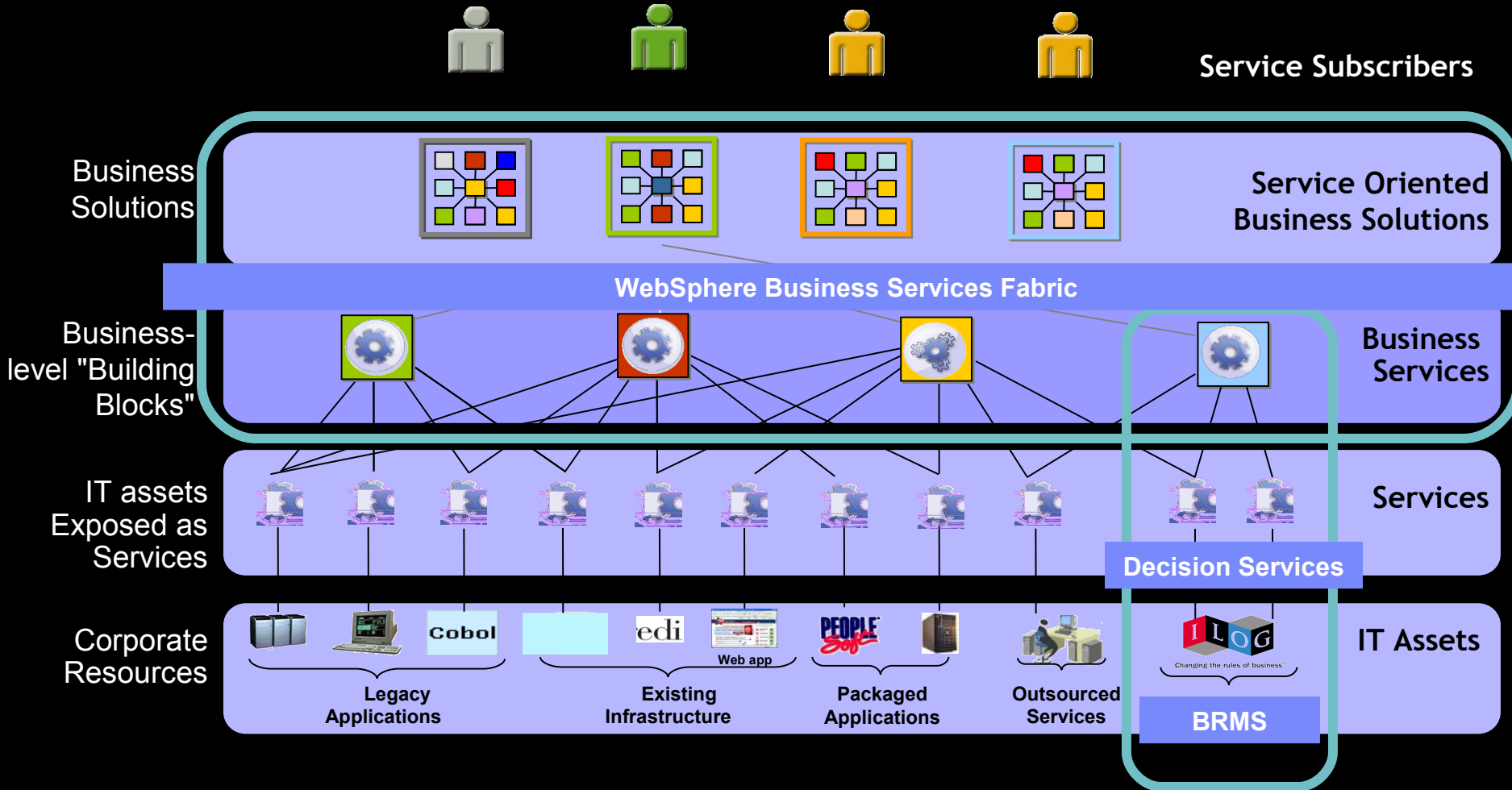
	A	B	C	D	E	F	G	H
1		fee	plannedItems	type	ppvTreshold	ppvAmount	totalPlannedExhibitions	rightsList
					float	int		vector
					5	0		Internet
								SOD

	B	C	D	E	F	G
	baseAmount	adjustments	serviceId	parent	plannedExhibitions	nbDownloads
	float	vector	int	PlanItem	int	int
em0	3800	Adjustment0	0		0	2000
em1	3800	Adjustment1	0		0	4000
em2	600	Adjustment2	123456	PlanItem0	0	2000
em3	600	Adjustment3	123456	PlanItem1	0	4000
em4	5000	Adjustment4	111	PlanItem0	0	2000
em5	5000	Adjustment5	111	PlanItem1	0	4000
em6	600	Adjustment6	123456	PlanItem0	0	2000
em7	600	Adjustment7	123456	PlanItem1	0	4000

	D	E
	adjustmentType	adjustmentUnit
	string	string
	SURCHARGE	DOLLARS
	SURCHARGE	DOLLARS
or 6.0% split	SURCHARGE	DOLLARS
or 6.0% split	SURCHARGE	DOLLARS
or 50.0% split	SURCHARGE	DOLLARS
or 50.0% split	SURCHARGE	DOLLARS
or 6.0% split	SURCHARGE	DOLLARS
or 6.0% split	SURCHARGE	DOLLARS

- RSM + Excel for Unit and Regression testing.
- RSM + Historical / Projection database for Simulation
- Custom KPI: monthly amortizations

ILOG BRMS & WebSphere Business Services Fabric within SOA



Quick Facts

20+ years of technology & market leadership

ILOG JRules to Automate Underwriting Process for Aviva Canada

JRules Delivers Ease-of-Use and Speed-to-Market Gains

SUNNYVALE, Calif. – Dec. 10, 2008 – ILOG® (NASDAQ: ILOG; Euronext: ILO, ISIN: FR0004042364) today announced that Aviva Canada Inc., a leading property and casualty insurance group, selected [ILOG JRules®](#), a key offering in [ILOG's business rule management system](#) (BRMS) product line, to automate its underwriting process for personal lines. With the new BRMS-based platform, which will support Aviva's partners and customers, the carrier expects to achieve significant speed-to-market gains by being able to implement rule changes that govern certain underwriting processes in days or real-time and with rule execution occurring in milliseconds.

ILOG JRules is a key component of Aviva Canada's common service delivery platform, an e-commerce foundation that will enhance the company's ability to conduct business using web-based technologies. Based on a service-oriented architecture (SOA) that also includes IBM Websphere, the platform delivers the agility needed to create shared services that can be leveraged across applications and lines of business. Aviva Canada has also invested in IBM's Insurance Application Architecture (IAA) and is currently looking at evolving their platform to take advantage of this framework. Since ILOG JRules allows business rules to be exposed as decision services in a SOA, the carrier plans to use the BRMS to automate other processes in the future such as claims and underwriting commercial lines.

[Aviva Canada Inc. provides home, automobile and business insurance and premier](#)

"We selected ILOG JRules because of its ease-of-use, advanced rule management capabilities for business and IT users, and tight integration in a service-oriented architecture," said Michael Lin, vice president e-Commerce, Aviva Canada. "Business rules are a fundamental part of insurance processes. ILOG's track record as a BRMS provider and the support we received from ILOG were also deciding factors for us choosing JRules."

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Aviva Canada Inc. provides home, automobile and business insurance and premier claims service to millions of Canadians. The carrier is a wholly-owned subsidiary of Aviva plc, the world's fifth largest insurance group. In choosing ILOG JRules, Aviva Canada wanted the ability to easily create, manage and centrally maintain business rules for its

Santander Chooses ILOG JRules for Services-Orientated Architecture Initiative

Europe's Leading Bank To Use BRMS to Enhance Business Agility and Shorten Business Response Times

MADRID – June 28, 2006 – ILOG® (NASDAQ: ILOG; Euronext: ILO, ISIN: FR0004042364) today announced that Santander, the largest bank in the euro zone and the fourth largest in Europe by market capitalization, has chosen [ILOG JRules™](#), a key offering in ILOG's [Business Rule Management System \(BRMS\)](#) product line, as an essential element of its new services-oriented architecture (SOA) strategy. As part of BANKSPHERE, Santander's multi-channel banking middleware platform, ILOG JRules will be used to automate decision-making and policy management across the entire organization, while enhancing business agility and shortening business response times.

Santander decided to adopt an SOA strategy to streamline its IT infrastructure from front to back-office, with the goals of continuously improving customer service and reducing costs. The objective was to have a single platform across all banks in the Group to standardize processes and create product factories (back-office systems able to process the products for various distribution channels – under different brands – or for different packages). By integrating ILOG JRules in their SOA infrastructure, Santander will maximize the re-usability and adaptability of its platform across all banks. Moreover, the use of rules will guarantee that the banks will be able to respond quickly to changes in regulations and market conditions.

In addition to the SOA initiative, Santander is already evaluating JRules for additional projects, including risk qualification, buying propensity and debt qualification, subscriptions, as well as the listing and selection of documents for a banking transaction.

"Santander considers IT a key component of its business strategy," said Maite Agujetas, Chief Architecture Officer at Santander. "We are confident that the implementation of ILOG JRules in BANKSPHERE will help us enhance our competitiveness by making a significant contribution towards harmonizing our IT infrastructure and ensuring we can react quickly to changing business conditions."

eBay - Enterprise Rules Platform

Situation

- **Web site = product => need for incremental, predictable & scalable change management**
 - Issue to cope with **high pace of change requests**
 - **Fragmented & rudimentary rules engines** would not enable managed & scalable deployment
 - Lack of **centralized management & oversight** – difficulty to maintain & test rules

Goals

- **Enhance user experience & Improve response time across all web site**
 - Reduce amount of **time to change** features/services on retailer's site (38 markets)
 - Improve **manageability** of transaction related rules (**102M posting any day, 6M new posting / day**)
 - Ensure **rule consistency** – critical for the **consumer confidence & company public image**

Solution

- **An enterprise rules platform based on ILOG JRules to**
 - Support decisioning – **marketing promotions, eligibility...** – across multiple applications & channels
 - Ensure predictable, scalable & collaborative **change management**
 - Enable high performance & reliable processing – **2000+ rules in 100ms, 24X7 with no downtime**

Benefits

- **Streamlined change management at the enterprise level...**
 - **100 users across geos/departments publishing rules on a daily basis – 10s of new rules / week**
 - **Quick time to market for new product & services – business rules updated in minutes**
 - **More predictability to support site enhancement – 300+ new features / quarter**
- **... driving enhanced user experience & lower cost of operation**

ING Belgium - Pricing

Situation

- Fragmentation - **10s of legacy applications with pricing logic** hard-coded in COBOL used to calculate customer fees on account & account-related operations
- Cost inefficiencies - **high IT maintenance costs** , **calculation of customer-specific pricing is 80% manual**
- **Errors** - charging customers correctly is key to customer satisfaction, but there is lack of transparency
- **Compliance** - Ensuring compliance with **European directive on VAT and invoicing** (directive 2001/115/EC)

Goals

- Reduce time-to-market required to introduce a new offer, a new product or a new pricing policy
- Improve **transparency of the pricing policies** and enable what-if simulation to evaluate the impact of changing pricing rules.
- **Reduce maintenance costs**
- **Eliminate manual processing** which is time-consuming and error-prone.
- Performance & scalability: support volumes of batch processing and to enable online processing

Solution

- Re-engineered pricing platform with a high performance rules-based pricing engine integrated through ING ESB
 - ILOG BRMS to centralize & automate key decisions **product-level pricing, agreement-level pricing, customer segmentation and VAT billing.**
- **Improve business & IT alignment** – Business Analysts are responsible of discussing business policies with the marketing product managers and translating them into business rules

Benefits

- New system fully supports **ING retail and wholesale banking** strategy in terms of cost competitiveness & customer satisfaction
 - Reduced maintenance costs thanks to a **centralized pricing engine reused as a service** by multiple applications
 - **Transparency of pricing rules** that can be **validated by business users**, empowerment of business users
- Shortened time-to-market to implement changes of pricing policies from months to days.
 - Swift & cost effective updates – e.g. **4 weeks to implement pricing policies for new SEPA products**
- High performance & scalable pricing engine enabling online processing: **2M operations processed in 15 minutes**

Visa International - Billing

Situation

- **Billing & pre-processing** is a major source of **Member dissatisfaction**
 - Billing questions cannot be quickly or effectively answered
 - Member **invoices are confusing** and could be improved
- Production support groups cannot effectively **support regions & members**
 - **Inability to** make rules & pricing **changes** on a timely basis
- Limited ability to **audit** transactions through the system

Goals



- Create a high performance & flexible billing system
- **Reduce billing errors** resulting in lost revenue
- Improve **transparency & audit ability** of billing system
- Deliver better support for **rapid policy update & custom requests**





Solution

- Implement ILOG BRMS as a core technology for validating routing data in billing system
 - **Validate conditions** on fields of the Visa transaction record
 - Assign a billing number to generate an invoice for banks & Visa partners
- Process **150M transactions per day running some 7,000 rules** in a batch environment
 - Integrated with Ab Initio runtime execution environment
- Easy access to business rules through web based interface & Microstrategy reports

Benefits

- **Reduced costs, revenue leakage & risk** associated with aging, proprietary legacy system
- Effectively **managed rules & policies** across the billing system
- Improved business efficiency through
 - **reducing manual workload & eliminating redundant work**
 - **exercising greater control & discipline over business processes & rules**
 - **removing “one size fits all” approach**

Customer	Application
	<p>BRMS based Underwriting & pricing system to support personal lines</p>
	<p>BRMS based pricing & promotions management system</p>
	<p>BRMS based system for eligibility and benefits calculation</p>
	<p>BPM / ECM / BRMS based commercial loan origination system</p>

Customer	Application	Results
	BRMS based Underwriting & pricing system to support personal lines	<ul style="list-style-type: none"> • Improved pass through rate from 17% to 76% • Increased new business volume by 50%
	BRMS based pricing & promotions management system	<ul style="list-style-type: none"> • Improved Time to Market for new pricing from 3 months to 2 days • 25% over achievement on Revenue Business Target
	BRMS based system for eligibility and benefits calculation	<ul style="list-style-type: none"> • 7 minutes turn around time vs. 6 weeks, no backlog • New Regulation implemented in days vs. months
	BPM / ECM / BRMS based commercial loan origination system	<ul style="list-style-type: none"> • 93% improvement for application approval (15 days to 1) • 1,000+ days annual savings in compliance audit

BRMS Usage Across Industries

Banking

- Loan Origination
- Credit Decisioning
- Sales Advisory
- Payments
- Accounting

Insurance

- Claims Processing
- Underwriting
- Quoting
- Rating
- Commissioning

Capital Markets

- Automated Trading
- Trade Order Management
- Accounting
- Compliance KYC / AML
- On Boarding

Public Sector

- Claims Processing
- Entitlement and Benefit calculation
- Fraud Detection and Management
- Screening and Targeting

Telecom

- Offer Configuration
- Order Management
- Fraud Detection and Management
- Loyalty Programs
- Network Monitoring

Transportation & Travel

- Promotions Management
- Loyalty Programs
- Customer Service
- Billing
- Contract Management

Retail

- Online recommendation
- Campaign Management
- Order Management
- Pricing

Manufacturing

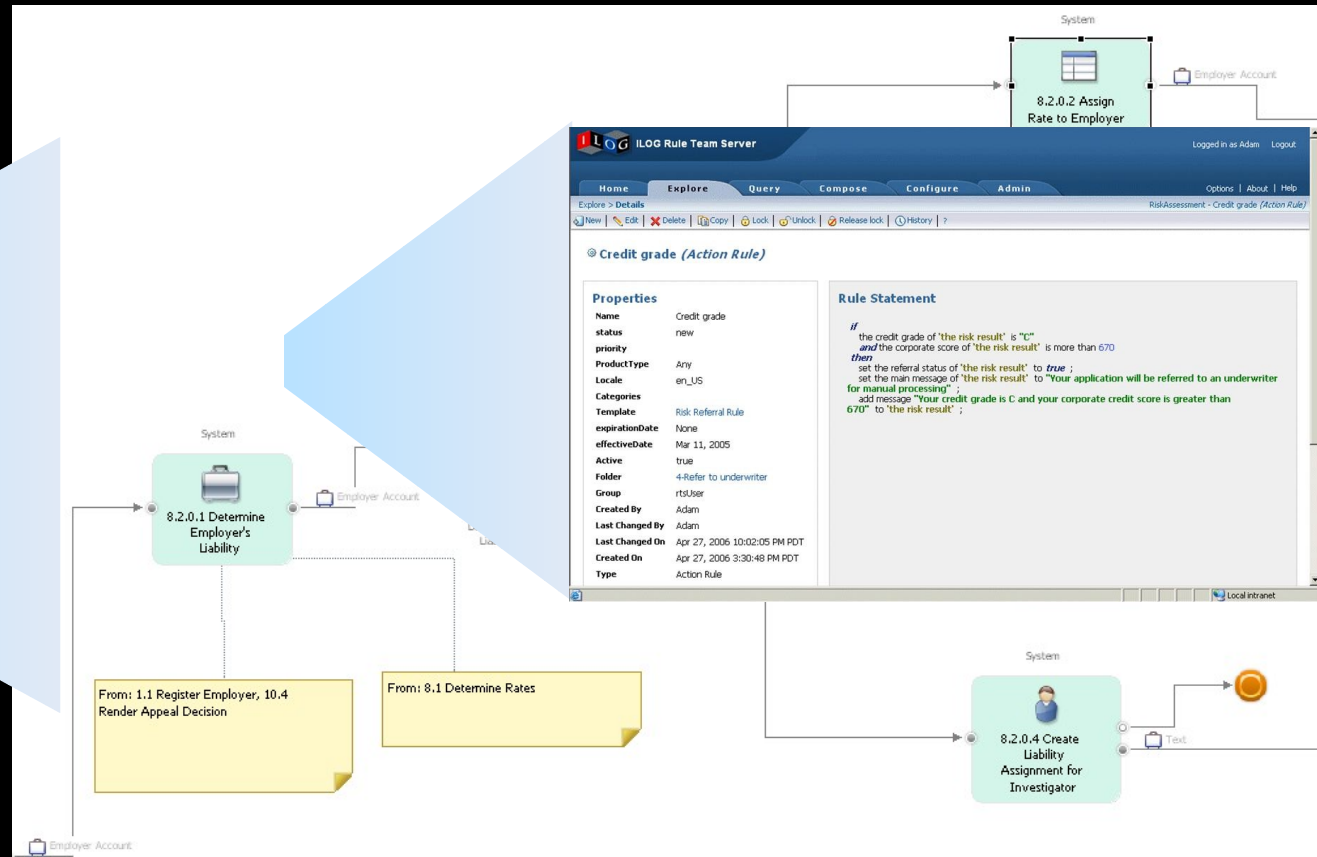
- Production quality control
- Order Management
- Billing
- Contract Management

Understanding the Opportunity Process Mgmt

Describes the “how” of the core activities of the enterprise
Combines automatable and human elements
Is fundamentally concerned with operational efficiency of the organization

Rules Mgmt

Determines the “what” of enterprise activity
Is focused on automating decisions
Is fundamentally concerned with the operational intelligence of the organization



ILOG BRMS Benefits



Implementing change in a way that is easy, safe and predictable



Reducing the time and cost required to develop and maintain operational systems that are affected by change



Providing a way for IT and Business functions to work collaboratively on defining and updating the decision logic that drives operational systems



Increasing the visibility of how systems use and are affected by decision logic

Thank you !