

IBM WebSphere Operational Decision Management

Improve business outcomes with real-time, intelligent decision automation



Highlights

- Simplify decision governance and visibility with a unified repository for business rule and event-based decision logic
- Enable business users to manage decisions in collaboration with IT
- Automate operational decision-making consistently across business processes and applications
- Make more profitable decisions with real-time detection of opportunities and risks
- Ensure precise responses for highly variable decisions based on the specific context of a process, transaction or interaction

Overview

Business agility is the hallmark of successful organizations. It is the ability to adapt quickly and efficiently to changing markets, competitive actions and regulatory and legislative mandates. Information technology plays a critical role in how organizations operate, enabling significant productivity and efficiency improvements.

In many organizations, operational systems are a black box for the people who formulate and direct business strategies and policies. They entrust the implementation of these policies within IT systems to their technical development staff and expect it to be done rapidly. Business policy implementation in such instances can result in frustration for both the line-of-business (LOB) groups and IT personnel. LOBs want better visibility of the logic that drives their systems, along with the ability to make changes while IT wants to maintain control over systems and be able to hand over certain maintenance aspects of these systems tied to the business domain and knowledge.

IBM® WebSphere® Operational Decision Management (WODM) addresses three key challenges related to the implementation of business policies into IT systems that are critical to running day-to-day operations. The challenges and their related solutions are:

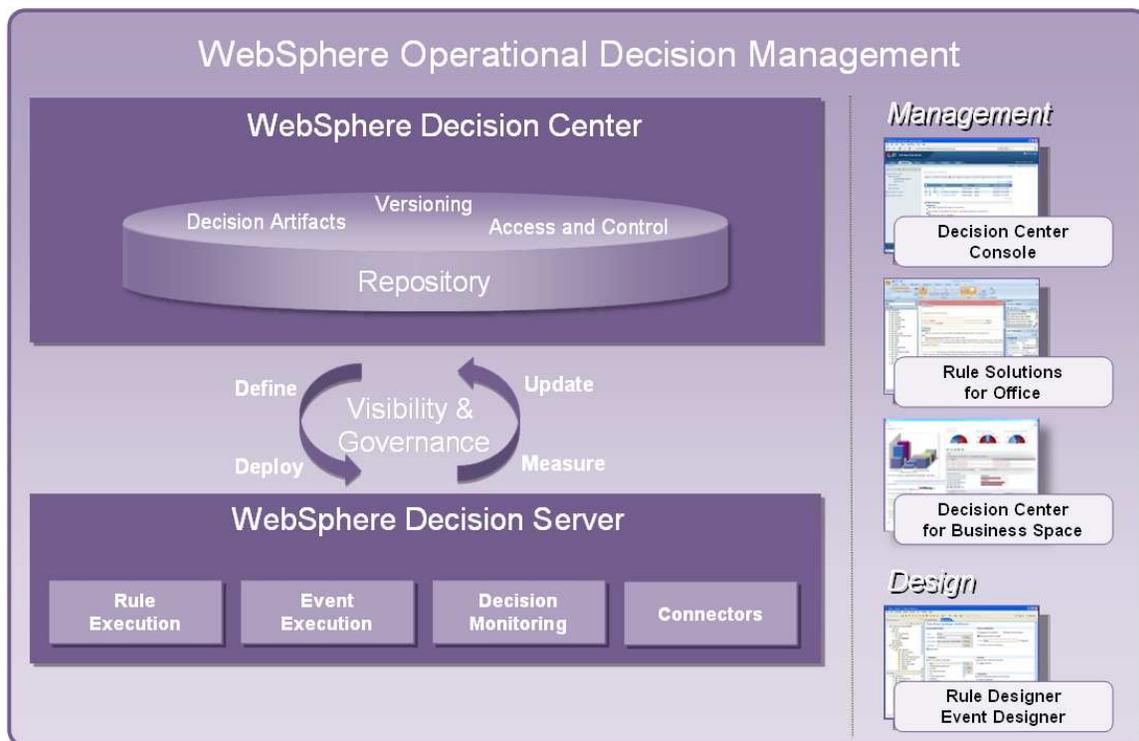
- **Change:** accelerating the ability of an organization to respond to evolving market demands, competitive actions and regulatory requirements
- **Control:** simplifying the visibility and governance of automated business decisions within an organization
- **Precision:** ensuring that business systems deliver the right interactions at the right time

A powerful solution to automate and govern operational business decisions

WebSphere Operational Decision Management provides critical technology for organizations in virtually every industry to improve the quality of transaction and process-related decisions that are made repeatedly, determining the appropriate course of action based on the specific context of each situation. A combined business rules and events management platform, WODM provides comprehensive capabilities to increase the value of customer, partner and internal interactions:

- Enables LOB subject matter experts to author and maintain decision logic and improve collaboration between business and IT teams
- Separates decisions from processes and applications, improving the governance of change and facilitating re-use across business systems
- Executes precise, real-time decisions based on the context of specific interactions

Using WODM, organizations gain the **power to adapt, align and act**, improving their ability to take advantage of business opportunities and mitigate risk conditions.



A comprehensive platform for the management and execution of business rules and business events

The power to adapt

For most organizations, making the right decision at the right time requires frequent updates to their operational business systems. The dynamic nature of the business environment means that what is true today may or may not be applicable tomorrow. New business opportunities and risks, competitive actions, additional regulatory requirements and business policy changes are constantly occurring, requiring business systems to be able to evolve with them.

One of the biggest challenges that organizations encounter while keeping pace with new and evolving business requirements is the time required to implement change based on the traditional application development lifecycle—requirement specification, analysis, design, development, testing and deployment, frequently with multiple iterations. The traditional approach can seriously inhibit the ability of an organization to adapt swiftly when its business systems are required to

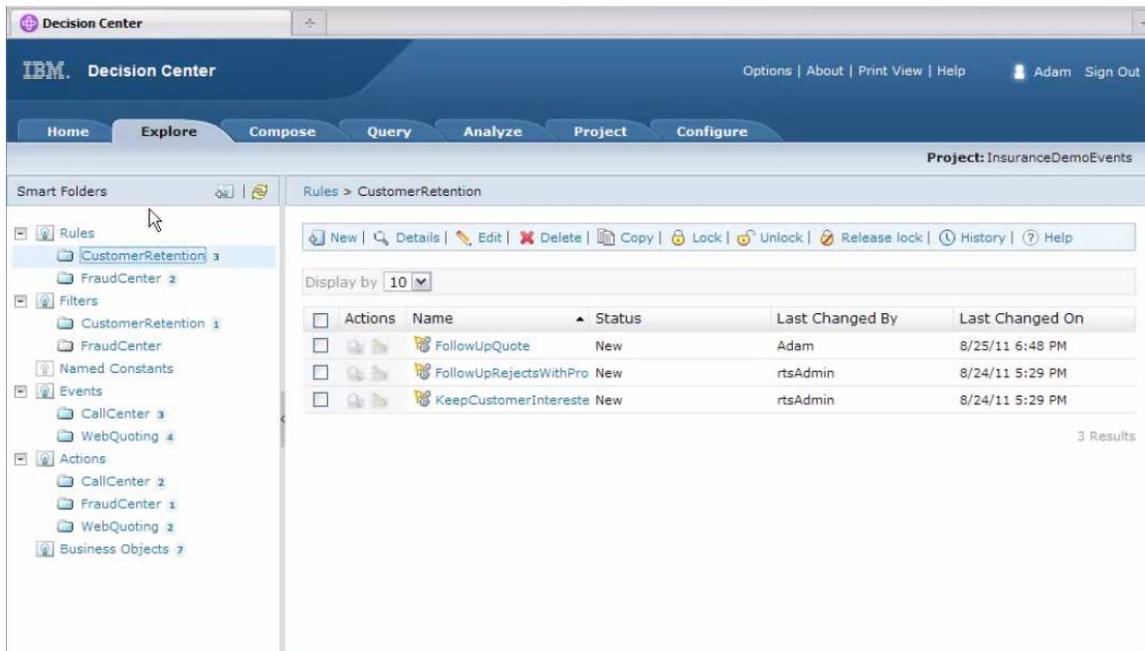
establish specialized pricing for a new customer or territory, ensure adherence to a contractual obligation or launch a new promotional program. It also creates a lack of visibility and understanding outside of IT relating to how business systems work. IT creates applications that provide specific functionality, which essentially act as a black box to LOB users in terms of what drives systems' behavior and what is required to change that behavior.

WebSphere Operational Decision Management fundamentally changes this situation by providing a set of capabilities for LOB functions to participate directly in the decision management lifecycle, while also separating decision changes from the application development lifecycle. Thus, organizations can implement decision changes on a more frequent and shorter timeframe to meet their business needs.

WODM enables decision logic to be based on a non-technical language with a customizable vocabulary that reflects the domain-specific terminology of an organization, allowing anyone to understand the exact conditions and actions of a decision definition. The customizable vocabulary is mapped to an underlying object model, which is used to deploy automated decisions to production systems. LOB users no longer have to worry about the translation of specifications into application code. Instead, they can author and maintain decisions directly, using intuitive editors to guide the user, with the ability to even test and validate that those definitions meet their business requirements. While business event and business rule definitions can use a standard 'if-then-else' text format (called *business action language*), business rules can also be defined using a variety of graphical formats, including *decision tables*, *decision trees* and *scorecards*, as well as *rule flows* to specify the execution order of rulesets for a given decision request.

The ability to author and maintain decision definitions is made available through *IBM WebSphere Decision Center*, which provides all the business user-facing capabilities of WODM. WebSphere Decision Center gives LOB users the ability to participate directly in controlling the definition and governance of rule and event definitions that enforce their business policies. Users can also associate metadata to decision definitions, such as effective and expiration dates, lifecycle status and relationships to other definitions, providing additional context in how they are used in the production environment. WebSphere Decision Center provides an enterprise repository for governing decision logic, with a set of interfaces for accessing the repository:

- *Decision Center Console*: an out-of-the-box web environment, providing business teams the ability to work collaboratively on managing decision logic, and allowing specified access and change permissions for individual users. The Decision Center Console provides a comprehensive set of governance capabilities, including testing, reporting and analysis of definitions.
- *Decision Center for Business Space*: a mashup-based web environment, enabling decision management capabilities to be combined with other business system management functions, such as process reports through IBM Business Process Manager and application monitoring through IBM Business Monitor.
- *Rule Solutions for Office*: allows business rule-based decisions, such as business action language rules, ruleflows and decision tables, to be authored and edited through Microsoft Office Word and Excel. By loading a lightweight plug-in for Microsoft Office, business users can work with file-based ruledocs in a guided manner, leveraging rule editors that provide auto-completion assistance. Since ruledocs contain all the object model details for the associated project of the rules, users have access to customized business vocabulary, and rules are automatically validated for correct logic and syntax. Ruledocs are created using the Decision Center Console, which extracts rulesets or entire rule projects from the repository; individual business rules can also be accessed in the Decision Center Console and then opened/edited using Rule Solutions for Office.



The Decision Center Console provides the most complete set of management capabilities for business users

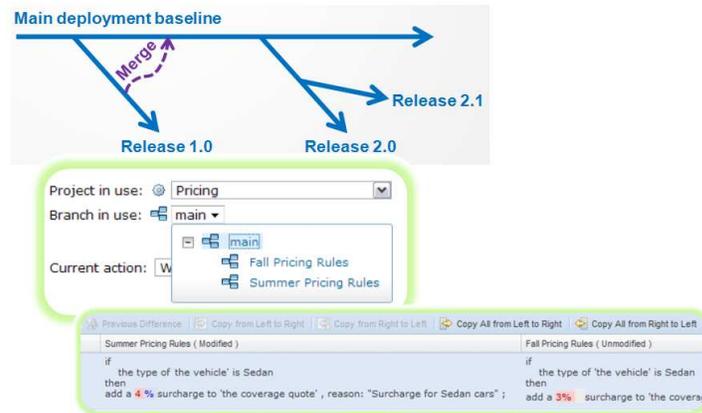
Whichever interface is utilized, business users gain visibility and accelerate implementation of the decision logic that enables operational systems to meet the evolving needs of the business.

The power to align

The ability to easily and efficiently change decision logic is only as effective as the ability to control those changes. Governance of changes enables both IT and LOB teams to have confidence that they are correctly implementing decision logic, and that changes truly reflect business requirements. WebSphere Operational Decision Management provides the perfect combination of business user empowerment and change governance to ensure easy, safe and reliable implementation of decision logic.

As described in the previous section, the WebSphere Decision Center's repository is the foundation for change governance. The repository provides a single source of truth for automated decisions that are used across applications and processes, enabling users to make a change in one place that can be deployed for use across many systems. Using role-based access controls, the repository allows each LOB participant specific access and management capabilities, along with providing multi-level versioning for individual definitions, sets of definitions and entire business rule and business event projects.

Change governance requires the ability to handle both immediate and future changes at the same time. The multiple release management capabilities of WODM allow teams to work on multiple versions of a project—by creating branches off a baseline version of a project, different versions can be created and worked on in parallel. This capability is useful particularly when working on groups of changes that are planned to be implemented together. Disparate branch versions can be viewed individually and compared side-by-side to see the differences between them. As versions are ready to be deployed, they can be used to create a new baseline and merged in whole or partially with other branch versions.



The multiple release management capabilities allow teams to work concurrently on staged releases of a business rule or business event project

The Decision Center's repository can be accessed from either the Decision Center Console or Decision Center for Business Space interface. The repository also provides policymakers the capability to align with IT, allowing technical teams to bring together decision logic changes with the changes they are making to the overall applications that automate decisions in the production environment. IT developers can synchronize the repository with the Eclipse-based Rule and Event Designer components which they use to create and enhance decision management applications. This synchronization can be done for an entire project or selected parts of a project based on the scope of the change—synchronization is bi-directional, so that IT can reflect LOB decision changes in the work they are doing in the development environment, and enhancements for LOB users can be easily made available in the Decision Center.

WODM also provides a set of testing capabilities to validate and ensure that changes meet the needs of the business and the systems that will use the results of decision execution. These capabilities provide a wide range of testing functionality:

- Unit and regression testing to ensure individual definitions execute as expected
- Functional testing to execute decision sets against test data and capture the results
- Simulation to measure the business results of decision sets against either historical or test data

The breadth of governance capabilities in WebSphere Operational Decision Management is essential to the proper implementation of decision change, and brings assurance to IT that they can pass control of decision changes to LOB subject matter experts.

The power to act

WebSphere Operational Decision Management is not just a repository for governing decision definitions—it also provides capabilities for executing decision logic required by processes and transactional applications. The runtime capabilities of WODM are made available through *IBM WebSphere Decision Server*, along with the development tooling for creating decision management applications to intelligently automate a wide range of decisions such as:

- Product and promotional offers
- Eligibility and pricing determinations
- Case and customer prioritizations
- Risk assessments and fraud determinations

WODM can handle fully automated scenarios—where an end customer is using a web channel or a self-service system (e.g., a point-of-sale terminal)—as well as semi-automated scenarios, when the decision response is delivered to a person who is interacting with the end customer (e.g., a call center employee, or face-to-face situations, such as in a branch office, retail store or medical

facility). In the semi-automated scenario, the decision management application acts in a decision support capacity, providing guidance and recommendations that help a person make the optimal decision when presented with a wide number of options or decision variables.

WebSphere Decision Server comes with specific execution runtimes for business rules and business events. This allows decision management applications to be designed and deployed to handle specific types of automation:

- Business event execution can process data across many different sources, detecting and responding to event patterns among like or related events, missing events and aggregate events. The *Event Execution Runtime* includes a number of integration connectors to maintain a persistent state with different systems, allowing it to track data patterns over long time periods and correlate events across multiple sources. The result of an event pattern correlation can be an alert or an automated action. In many cases, the action will invoke business rule execution in order to determine the appropriate decision response, although it can also trigger actions in processes and applications.
- Business rule execution runs data against sets of rules in order to determine a decision response requested from a process or application. The rule execution runtime is designed to handle large numbers of rule conditions (hundreds or thousands) for any given request—it has the ability to execute a designated order of rules (a rule flow) or an inference-based execution, where the rule engine determines which rules are required based on the context of the request. The *Rule Execution Server* can be integrated with additional data sources and systems as needed in order to complete a rule execution.

WebSphere Decision Server's runtime components support a wide range of platforms to meet the varying needs of enterprise architectures. This includes the ability to run on both distributed and mainframe systems, typically running within an application server. For IBM z/OS®, an operating system for mainframes, both the event and rule execution components can run inside IBM WebSphere Application Server, while the *zRule Execution Server* component can be deployed stand-alone or within a IBM CICS® Transaction Server. Another option for mainframe applications is the ability to compile rulesets as generated COBOL that can be inserted directly into application code; this is a useful initial step in application modernization efforts, replacing legacy code with more maintainable and understandable decision logic. Once IT is ready to externalize the runtime decision logic from the COBOL application, the generated code can be replaced with a decision service request to the Rule Execution Server or the zRule Execution Server.

WebSphere Decision Server also includes the Eclipse-based development tooling that IT uses to build decision management applications. The *Rule Designer* and *Event Designer* are separate perspectives that can be run within a single Eclipse instance. This provides developers a “One-Stop” development environment: all the artifacts and operations needed to create and maintain rule and event-based applications are included. From within the Eclipse perspectives, a developer can:

- Create a logical *business object model (BOM)* for the application and map it to a customized, domain-specific vocabulary
- Associate the BOM to an execution model and XML schemas
- Create a metadata model for decision artifacts (application-specific data fields beyond standard metadata; for example, custom rule status properties)
- Specify packaging of decisions into executable sets, corresponding broadly to a single policy-driven decision within the application
- Separate business rules in a ruleset into tasks, and specify a rule flow to orchestrate the execution of these tasks
- Create decision definitions in a natural language or graphical formats (for business rules), which can be expressed in one or a more localized versions (for example, English and Spanish)
- Create business rule-based scorecards that can be executed within a rule flow
- Create default applications that invoke decisions for test purposes

- Synchronize business rule and event projects with the Decision Center's repository
- Deploy applications to the production environment, through the execution management and monitoring capabilities that are part of the runtime components

Since testing is a key part of application development, the Rule Designer and Event Designer perspectives provide the ability to integrate with standard, platform-specific testing tools such as JUnit. When a test fails and the developer needs to investigate in order to find out what went wrong, integrated co-debugging of decision definitions and Java code that lets the developer launch the application (or a remotely running instance of the application) in debug mode; the developer can then use the standard Eclipse debugging facilities to set breakpoints and examine various aspects of the application and its interaction with the underlying system. In addition, developers can define test and simulation scenarios that can be used by LOB users in Decision Center as part of the governance of decision change validation.

The combination of development and runtime capabilities in Decision Server enables IT to create highly flexible, adaptable solutions that can detect and react to data patterns as they occur within a specified time period, and then provide the appropriate decision response to transactional and process-oriented business systems.

Make the best decision for each customer, partner and internal interaction

The ability to effectively automate decision-making within and across operational business systems is imperative for maximizing organizational efficiency, increasing employee productivity and improving the quality of actions that are made repeatedly in the course of the business day.

WebSphere Operational Decision Management provides the power to intelligently automate a wide range of decisions across business processes and applications, uniting IBM's market-leading capabilities for business rules management and business event processing in order to drive more responsive actions to business opportunities or risk conditions. Through the unique set of capabilities that IBM provides in this offering, organizations can implement changes to decision logic with increased speed and agility, improve decision collaboration with enhanced visibility and governance, and automate real-time actions with high performance and reliability.

For more information

To learn more about IBM WebSphere Operational Decision Management, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:

www.ibm.com/operational-decision-management

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