

TIBCO BusinessEvents

BENEFITS

- Breadth of capabilities that help organizations quickly build solutions for difficult, complex event processing
- Improved productivity and effective problem-solving as a result of accelerated collaboration between developers and business users
- Enterprise-class event processing performance for high availability, fault-tolerance, and horizontal/vertical scaling

CUSTOMER QUOTES

“The integration and the events capability allow us to have those relevant timely conversations with our customers across channels. We have the ability to know when the customer comes in what they’ve done previously in another channel and leverage that to continue the conversation.”

— Gayle Ramsay, Vice President of Customer Analytics, Bank of Montreal

BUSINESS VALUE

With TIBCO BusinessEvents, you will gain better operational intelligence that allows you to:

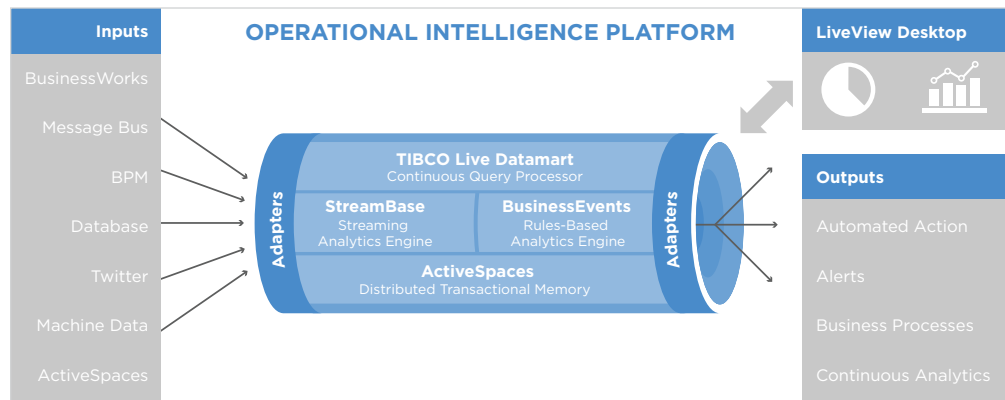
- Serve your customers with more value-added products and services
- Increase operational efficiency while reducing costs and risks
- Generate new sales and revenue

AT A GLANCE

TIBCO BusinessEvents® is a key component of the Fast Data platform that allows organizations to quickly build distributed, event-driven systems to support real-time decision-making and actions. Applications built with TIBCO BusinessEvents execute a continuous feedback cycle of sense-reason-respond-visualize to process real-time data and minimize decision latency.

Organizations can augment their traditional BI or big data strategy with real-time operational intelligence using TIBCO BusinessEvents. Where billions of people, systems, and things communicate and transact in real time across the globe, event-processing applications are increasingly in demand. TIBCO BusinessEvents enables organizations to transform to “digital business.”

TIBCO EVENT PROCESSING IN THE FAST DATA ARCHITECTURE



TIBCO BUSINESSEVENTS CAPABILITIES

DEVELOPER PRODUCTIVITY ADVANTAGE

Quickly building distributed, event-driven, real-time applications that solve difficult event processing problems — that require distributed state management, complex state transition logic, and rules — is a difficult undertaking.

TIBCO BusinessEvents provides a number of services and capabilities that allow developers to focus more on capturing and implementing business logic, and less on the complexities of building distributed, stateful systems. These capabilities improve collaboration with business users while reducing development time.

Key Features

- *Eclipse-based Integrated Development Environment (IDE):* TIBCO BusinessEvents® Studio is based on the Eclipse platform with built-in debugging and testing capabilities, reducing the learning curve for developers.
- *Model-driven Environment:* The Eclipse IDE allows developers to define UML-based modeling of data, state, and processes to represent the business data and relationships against which rules will execute, simplifying solution development.
- *Graphical Editors:* Graphical transformation and mapping tools allow developers to drag-and-drop a rich set of out-of-the box catalog functions or user-defined functions into the rules editor. Support for XPath/XSLT and JSON simplifies working with XML and JSON-based payloads with the ability to create transformation maps to convert payloads from one format to another.

SUPPORTED TIBCO PRODUCTS

- TIBCO ActiveMatrix BusinessWorks™
- TIBCO ActiveSpaces® Enterprise Edition
- TIBCO Administrator™ Enterprise Edition
- TIBCO Enterprise Message Service™
- TIBCO FTL®
- TIBCO Hawk®
- TIBCO Rendezvous®
- TIBCO Runtime Agent™

SUPPORTED PLATFORMS

- Mac OS X
- Cent OS X
- HP-UX 11i
- IBM AIX
- Microsoft Windows
- Microsoft Server
- Novell SUSE Linux Enterprise Server
- Oracle Enterprise Linux
- Oracle Solaris
- Red Hat Enterprise Linux Server
- Sun Solaris

- *Open Ecosystem:* A set of APIs enables a new ecosystem around TIBCO BusinessEvents. Users can create their own custom user interfaces to implement rules using modern technology such as HTML5. The applications built with TIBCO BusinessEvents can integrate with other applications on premises and in the cloud, making it easier to create a seamless Fast Data platform.
- *Embedded Analytics:* TIBCO® Enterprise Runtime for R (TERR) predictive analytics is easily injected into TIBCO BusinessEvents. Statistical scoring of models developed in R can be used in rules, offering organizations the ability to make real-time decisions based on smarter and deeper analytics of large sets of historical data.

BUSINESS USER EMPOWERMENT

Business analysts are looking for systems to expose key functions in a way that allows non-IT personnel to change certain aspects of system behavior. This self-service capability is critical to the business because it allows changes to be made rapidly in response to dynamic market conditions or competitor actions. Such capability gives business users more autonomy in executing their business strategies.

It is also important that the event processing systems interact with the business in the language that users understand. Most business users are not familiar with writing logic in Java or in a low-level language. TIBCO BusinessEvents provides a set of tools that allow organizations to create an environment where business users can focus on higher business logic, improving efficiency and business agility.

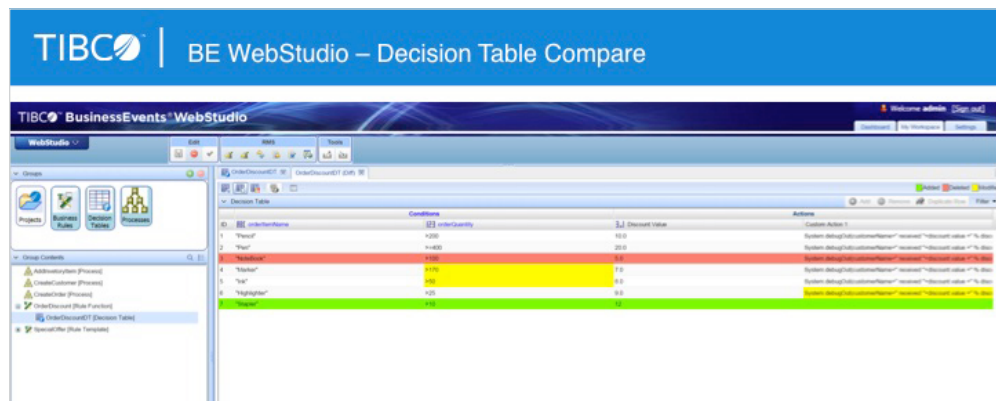
Key Features

- *TIBCO BusinessEvents® WebStudio:* A single environment in a web browser for business users to define and implement rules and system logic without coding and IT involvement. This direct deployment model increases overall business agility.
- *Business Rules Management Server (BRMS):* A content repository, web server, approvals workflow manager, and authentication and authorization service provider for WebStudio. Optimized for collaborative rule management in large teams.
- *Decision Tables:* Business user-defined rules in a familiar Excel spreadsheet-like interface. Decision tables can be imported and exported from Microsoft Excel or directly edited in a browser or Eclipse IDE. A new preview feature gives instant understanding of the changes made to business rules.
- *Business Rules:* Parameterized rules implemented by business users using IT-defined, business-friendly rule templates. The powerful rule language provides the ability to write complex rules using if/else Java like constructs and extends via user-defined functions.
- *State Machines:* An event-driven and rules-based mechanism for tracking and tracing entity lifecycles. The mechanism captures non-events through timeouts, allowing better SLA monitoring by alerting internal staff of a time-out, as well as by providing real-time status updates to customers.
- *Process Orchestration Flows:* Event-driven, straight-through processing compliant with BPMN 2.0, providing inference and decision paradigms within the processes. Users can create and manage complex process flows with simple drag and drop tools in WebStudio.
- *Table Analyzer:* An automatic rule validation tool that helps identify test coverage to make it easier for users to validate and foolproof their rules.
- *Hot Deployment:* A flexible framework for business users to modify and implement rules without IT involvement.

SUPPORTED THIRD-PARTY SOFTWARE

- Database
 - IBM DB2 for Linux, Unix, and Windows
 - Microsoft SQL Server
 - Oracle Berkeley DB Java Edition
 - Oracle Coherence
 - Oracle Database
- LDAP
 - IBM Tivoli Directory Server
 - Microsoft Active Directory
 - OpenLDAP
 - Oracle Directory Server Enterprise Edition
- Web Browser
 - Google Chrome
 - Microsoft Internet Explorer
 - Mozilla Firefox

- *Snapshot and Continuous Queries*: Snapshot queries provide information on the state of objects stored in the in-memory data grid. Continuous queries execute continuous aggregations on event streams and trigger actions through callbacks. Both are created in SQL-like query language.
- *Pattern Matching*: Temporal relations across event streams can be expressed through patterns such as sequencing, duplicate detection, store and forward, and others using simple pattern-matching language. The TIBCO BusinessEvents engine triggers positive or negative callback functions as it detects matching patterns.



WebStudio Decision Table Preview. Visual cues show the changes made to business rules. A quick assessment of a rule update request can be made before deploying the change onto the production system.

SECURITY

- Authentication (LDAP and operation system's authentication)
- Data encryption

*For the latest information on supported platform and software versions, please refer to the product Read Me document.



Business Rules Creation. Using IT-defined, business-friendly rule templates, business users can implement parameterized rules easily and quickly.

ENTERPRISE-CLASS PLATFORM FOR FAST DATA

Building an event-driven rules-based system that can scale to handle millions of events and stateful business entities requires a platform architecture that is flexible, distributed, and elastic. TIBCO BusinessEvents provides a number of features that allow solutions to scale as business needs dictate.

Key Features

- *Multi-Protocol Channel Support:* TIBCO BusinessEvents supports a number of high-speed event input and output channels, including messaging and communications interfaces such as JMS, HTTP, TCP/IP, TIBCO FTL, TIBCO Hawk, and TIBCO ActiveSpaces. This capability ensures connectivity for better event absorption while simplifying access to external systems.
- *Distributed, Agent-Based Deployment Topology:* The state of the data is stored in a distributed, horizontally scalable, and elastic in-memory data grid with built-in replication of data in-memory for rapid access and fault-tolerance. Default transport-level load balancing or content-based smart load balancing is supported.
- *Multiple Persistence Options:* For an additional level of recovery capability, TIBCO BusinessEvents allows organizations to choose either local storage (shared-nothing persistence) or a central database (shared-all persistence) for underlying stored data.
- *Various Memory Management Strategies:* Stateful business objects and events may be assigned different persistence and storage strategies, such as memory only, cache only (unlimited), and cache only (limited). These strategies may also be combined with the persistence options. This flexibility allows organizations to associate their solution with the appropriate levels of storage and recoverability.
- *Data Grid Security:* Client authentication, data encryption, and SSL secured transports allow distributed applications that process and operate on privacy and sensitive information to be deployed safely on common infrastructure platforms.

USE CASES

TIBCO BusinessEvents can be used to develop rule-based real-time analytics applications in any industry. With operational intelligence for better, faster decisions and actions, organizations can provide superior customer service, optimize cost and resources, and increase revenue.

- *FSI:* Fraud detection and prevention, visualization of market data, order executions, trades deals, settlements, and pre-post trade exceptions.
- *Retail:* Instant offers enabling cross-selling and up-selling based on customer status, location, inventory, and other factors. Real-time inventory tracking and management. Real-time tracking of orders.
- *Telecommunication and Networking:* Real-time SLA management, network monitoring and protection, fraud detection.
- *Airlines:* Passenger experience management, notification of problems and changes, airline crew staffing, baggage tracking.
- *Logistics and Transportation:* Real-time visibility into order and package status, optimization of shipping movements in-transit and in-port.
- *Energy:* Predictive equipment maintenance, fault management of the grid.
- *Manufacturing:* Proactive maintenance of equipment, visibility into the status of machines and other shop-floor assets.

- *Healthcare:* Patient flow monitoring, bed inventory management, procedure optimization in response to disruptions and no-shows.
- *Service Organizations:* SLA monitoring, corrective actions to avoid unmet agreements.
- *Internet of Things:* Operations of industrial locomotives, connected cars, smart homes, health and wellness.

CASE STUDY

FINANCIAL SERVICES: GAME CHANGER IN CUSTOMER EXPERIENCE

Ensuring superior customer experience is the primary focus of financial services institutions. It ultimately generates repeat business and increases share of wallet from each customer.

One of the top 10 banks in North America was very reactionary in terms of customer interaction. It used only limited, traditional channels such as direct mail and email and did not have real-time customer information. At best, the available historical data was from the previous month. A full view of the customer was lacking. As a result, communication was neither timely nor personal, creating no interest to generate customer response.

It was critical for the bank to have the ability to gain a single, 360-degree view of its customers, including their actual activities, and prepare to present unique and relevant offers no matter what channel the customer used to contact the bank.

As the market moves into a digitized, omni-channel mode, the bank turned to TIBCO for its ability to provide the Fast Data architecture with the real-time event capabilities. Using TIBCO BusinessEvents, the bank can now leverage customer past history to determine what's relevant to that customer in the moment.

The bank reduced time to respond to a customer event from months or days to real time. This speed allowed the bank to continue to build a great customer experience, which both its customers and its sales people wanted. The VP of Customer Analytics asserts, "We can identify when a customer has done something significant and respond. Payback from real-time relevant offers was triple our investment costs."



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05/22/15