Achieving Business Agility with Decision Management

How 12 customers are using business rules and events to improve operational decision-making for better business outcomes
Achieving Business Agility with Decision Management

These success stories with Decision Management technology will give you a preview into how IBM customers are excelling at making day-to-day operational business decisions in a wide variety of industries. Are you grappling with finding effective solutions to any of these scenarios?

- Credit Determination
- Claims Validation
- Member Enrollment
- Underwriting
- Payment Authorization and Settlement
- Cross-sell and Up-sell Recommendations
- Promotions and Customer Loyalty Effectiveness
- National Border Control Management

Business rules management technology can automate your business expertise and provide the ability to safely manage decision-making, under constant change. Paired with the ability to identify and act on significant business events as they occur, these operational decision making capabilities lead to improved business outcomes.

For more information on these decisioning technologies, click here.

www.ibm.com/operational-decision-management

Visa Europe, United Kingdom

Visa Europe teamed with IBM to develop a high-performance clearing and settlement platform serving 4000 member institutions. To handle a wide variety of local conditions, the platform enables Visa business users to rapidly assess and adjust thousands of business rules governing operations.

Swiss Customs, Switzerland

How can so many rules be efficiently and reliably developed, tested, administered and deployed? Since 2006 the Swiss Federal Office for Information Technology has been using a Business Rule Management System (BRMS) for this task. In July 2011, the plausibility analysis service was redeployed to the IBM WebSphere JRules BRMS.

Benecard, United States

Benecard, a leading provider of prescription benefit programs, chose the IBM WebSphere ILOG JRules Business Rule Management System (BRMS) to streamline and automate its claims process.

Athletes’ Performance, United States

When developing its leading corporate wellness offering, the company deployed IBM WebSphere ILOG JRules, which utilizes training and nutritional logic to customize individual programs for its clients as they proceed through their wellness programs.
For BNP Paribas, a European leader in global banking and financial services, personalization is key to winning customer loyalty and increasing profits. To this end, the bank is rolling out a new master data management initiative that will give it unprecedented flexibility and speed to accommodate to changing market conditions and customize offers for each client.

HealthNow had multiple legacy systems, manual and disjointed processes in place. This was having an impact on their ability to respond quickly to changing regulatory, internal and external mandates.

Texas Education Agency was struggling to respond quickly to regulatory rule changes in its Teacher Certification Program because applications were dependent on business rules that were embedded within years of programming code.

To target customers more effectively, EMT uses multi-channel marketing campaigns, driven by sophisticated business rules. Creating and editing these rules was complex, creating significant work for the in-house and external development teams.

As a countermeasure to continuous and fierce wallet share competition, this credit card company needs to capture changes in customers' behavior, execute effective marketing and eventually maximize existing customers' value.

With over 3 million lines of code in its complex 35-year-old legacy mainframe system, the property exchange and rental company found itself facing several critical business issues. The system also limited the modes of member notification and threatening revenue.

The healthcare company wanted to engage thousands of clinics to deliver injection therapy, but it needed Complex Event Processing software to confirm all of the arrangements automatically. It chose IBM WebSphere Business Events, saving 90 percent of the costs of care.

Needing to minimize errors in IBM product and price catalogs, IBM used WebSphere Business Events and other WebSphere products to enable a real-time enterprise capable of business event processing.
Visa Europe

Processing payments with unprecedented agility and reliability

The European marketplace is highly complex. Efforts to unify it from an economic and commercial standpoint have been under way for decades, yet to this day it is still comprised of many discrete markets, currencies and sets of regulations. One of the latest efforts to strengthen the market through unification, led by the European Union was the creation of the Single Euro Payment Area (SEPA) and ratified by European Union member states adopting the Payment Services Directive (PSD, 2007/64/EC).

The SEPA initiative created a common set of rules for payments in countries using the Euro, under which all electronic payments are considered domestic, even those that take place across national borders. The goal was to create greater efficiency and promote commerce.

A strategic response to these specific and unique European member institutions business drivers was required and, as a result, Visa Europe became a dedicated European payments provider and wholly independent organization from the global payments provider Visa Inc.

A complex landscape calls for a new approach
Growing Visa Europe in response to the nature of the European environment became a challenge while remaining part of the global Visa Inc organization and global set of demands for change. This made it difficult to make responsive changes to shifting regulations and market conditions. This is why the creation of a dedicated European organization was deemed a wise move.

The issue is one of complexity. Each time a Visa card is used anywhere in the world, an authorization takes place and a transaction is created between the issuer’s financial institution and that of the merchant. At the end of each day, all of those millions of transactions must be settled.

Smart is...

An open clearing and settlement platform that allows Visa Europe to create and implement vast numbers of complex business rules faster than ever before.

Visa Europe addressed the unique nature of the European market by building a new payment platform which houses tens of thousands of business rules governing payment clearing and settlement. An open business rules management system speeds time-to-market and gains cost efficiencies. The result is greater business agility and competitiveness for both Visa Europe and its 4,000-plus member institutions. Simulation capabilities are soon expected to allow business users to become more proactive, predicting and assessing the impact of changes to key business rule parameters.
Every transaction is run through a set of business rules that govern the fee charged, the exchange rate applied, and other validation parameters such as proper formatting. These rules must be changed periodically, for example to adjust fees in response to market conditions, add new members or accommodate new regulations.

Under the legacy Visa Inc. global payments platform, each of these business rules was effectively hard-coded into the system, making it very difficult to bring new rules to market. Implementing a single policy change could take up to 18 months from the time of initial request to go-live—and while any given parameter might not need to change very often, the sheer number of them means that there is always a change that needs to be made.

When extended across the 36 countries, multiple currencies and thousands of members served by Visa Europe, it’s easy to see the management challenge posed by this rules-based clearing and settlement process. “For the European market, there are literally tens of thousands of business rules to consider,” says Justin Snoxall, vice president and head of development services for Visa Europe. “It’s a uniquely convoluted landscape that can make doing business difficult. For example, with so much to consider and the limitations of the legacy system, introducing new products or services could take a long time. This hampered our efforts to enter new markets.”

Breaking the business rule logjam
Visa Europe’s answer to the management challenge was to chart its own course. The new organization used its independence to create a separate authorization platform and clearing and settlement platform that would integrate with the Visa Inc. global system while adding a high degree of flexibility and agility to the payments process.

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**Business benefits**

- Allows customized rules to be brought to market much faster, typically three times faster than before, providing market differentiation through greater agility
- Reduces the cost of business rule maintenance, with savings of over 25% experienced to date.
- Will enable the creation of the most appropriate business rules using “what if” scenarios based on real data
- Makes the rule management process directly accessible to business users, adding flexibility and responsiveness
- Offers massive scalability and high performance, with 30,000 business rules supporting over 500 transaction types in 36 diverse markets

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**Smarter banking: Leveraging insight to build better business rules**

**Instrumented**

Live transaction and market data is collected from 36 markets and brought together in the high-performance Visa Europe Clearing and Settlement Service.

**Interconnected**

A business rule management system combines real-world information with business logic that enables rules to be tailored and bespoke to market and in some instances individual member institutions.

**Intelligent**

With deeper understanding of the potential impact of changes, Visa Europe will be able to address the needs of its members more effectively—creating true market differentiation.
Called the Visa Europe Clearing and Settlement Service (VECSS), the new platform uses IBM WebSphere® ILOG® JRules at its heart, markedly different from the older mainframe-based solution. The tens of thousands of business rules that govern its function are no longer hard-coded. They are stored as rules and gain further context from member institution business parameters stored in an IBM DB2® database, which allows them to be managed consistently and changed easily through a built-in business rules management system (BRMS). Rule changes now involve far less expenditure of staff time, resulting in savings in the maintenance costs associated with updates and reducing the total cost of ownership.

More significant, though, is the speed of change made possible by the new system. “The time it takes to change a business rule has gone from nine months to only three,” says Snoxall. “Within 13 months we’ve made 60 rule changes, while migrating members over to the new system at the same time. The BRMS actually has the potential to make changes within days and longer term even overnight, so should the business need arise for more rapid change, we’ll be ready,” Snoxall says. “It’s a whole new level of capability that’s a far cry from the legacy mainframe-based system.”

The scalable VECSS system is also much more efficient than the earlier clearing and settlement platform, which increases the quality of service to members. Since launch, it has been able process in excess of one billion transactions every six weeks. At peak times, VECSS is able to process over 8,000 transactions per second.

The efficient transaction handling and rule management offered by the system is very important in the context of Visa Europe’s unique business environment. The requirements of the member institutions are so widely varied that the organization is called upon to provide a high degree of customization. “Clearing and settlement follows a distinct set of processes from end to end, but not all payment transactions are processed in the same way,” Snoxall says. “We need to take into account specific conditions per region, contract type, customer—a whole host of variables.” The result is over 500 transaction types to deal with, which require 10,000 editing and validation rules, plus another 20,000 fee calculation rules. All of these must be managed effectively, which is made far simpler by the flexible solution.
The inside story: Getting there

“The way we approached the development of VECSS was not what one might expect because of the nature of our organization,” says Justin Snoxall. “We provide payment processing services to financial institutions, but Visa Europe is not a commercial service provider motivated by profit. Rather, it is a cooperative association devoted to serving the interests of our member financial institutions. Each of them has a say in what we do. So one of our major tasks was to gain their support for the VECSS project.”

An organization with such a large number of stakeholders might naturally chart a conservative course when implementing change, aiming to take the path of least resistance. “While we could have continued to use the global Visa Inc clearing and settlement platform, we saw the opportunity to create a far more capable solution and seized it,” Snoxall says. “I think our leadership showed great foresight in creating Visa Europe and empowering us to develop our own technology solution.”

To ensure internal support, transparency was essential. “Our members were kept informed of the project status and objectives, with care being taken to demonstrate the business value of the plan at all times,” Snoxall notes. “It’s a collaborative environment and we have strong relations with all of our members. As a result, the buy-in for the project was very smooth.”

The interaction with members played an important role in the way the project unfolded, Snoxall says. “We did encounter a few reservations about the ability of our organization to deliver on its own, so we looked for a partner who could be more than a systems integrator. We decided to go with a strong vendor who complemented our own capabilities, and the members gave us their full support.”

A new way to find the best answer

The flexibility made possible by VECSS has added considerably to the competitiveness of both Visa Europe and its members. New institutions can be added to the network much more quickly than ever before, and at less cost. New regulations are accommodated faster, and changes in status or the services provided to a given member are made with ease.

Enhancements are planned to leverage insight based on real-world data to determine the most suitable business rule for each situation. “The potential of the system is very exciting for our business users,” Snoxall says. “The ease of management is only the beginning. Once fully deployed,
they will be able to run ‘what-if’ scenarios that test the effect of any given rule change before implementing it. The BRMS will provide guidance for adjustments to the rule parameters, to deliver the desired result. That should help us reliably set the appropriate fees to maximize both member profitability and service utilization, while ensuring that members in different markets are treated equitably.”

To make certain that the deployment would support the company’s goals, Visa Europe sought assistance from IBM Software Services for WebSphere. Using the proven ILOG Solution Implementation Standard deployment methodology, IBM applied its extensive WebSphere ILOG BRMS implementation experience to help ensure the solution’s success.

An engagement with IBM ILOG Professional Services across the architecture, design and construction phases helped to manage implementation risk and ensure that the significant performance requirements were achieved. “The IBM team played an important role in the success of the project,” says Snoxall. “Their expertise dovetailed with ours to create a far more robust solution.”

**Achieving true business agility**

The ultimate goal is to enable Visa Europe’s general business users to manage business rules directly, making all needed adjustments before releasing the rule to IT for quality assurance and deployment. Each rule, and the change management process, are designed to be easily accessible and understood by line-of-business employees. This will result in even greater business agility by further speeding time-to-market.

Making it possible for business users to manipulate the rules themselves has important implications for the alignment of business and IT objectives at Visa Europe. By handing much of the change management process over to business users, IT can step back and devote more resources to the organization’s future roadmap, such as the creation of innovative new services.

This potential to make business users a part of the picture is where the real power of the system lies, according to Snoxall. “What VECSS gives us is tools that can put key capabilities into the hands of users. They become an integral part of the process, rather than mere consumers of it. That’s a tremendously powerful concept, and a much more efficient, effective way to do business for both us and our members. The better the service they can provide to their customers, the more accepted Visa becomes—and that’s what’s going to help us fulfill our vision of Visa becoming ‘the world’s most trusted currency’.”
For more information
To learn more about how IBM can help you transform your business, please contact your IBM sales representative or IBM Business Partner. Visit us at: ibm.com/smarterplanet/banking
Is the declared value of an automobile imported into Switzerland plausible or is the importer attempting to cheat at customs? With a continuously updated catalog of about 700 business rules in the customs clearance solution, the e-dec system automatically checks if everything in the customs declaration is correct.

E-dec is a service-oriented e-government platform of the Swiss Federal Customs Administration. E-dec is developed by the Federal Office for Information Technology (BIT) and has been in operation since 2006. The Swiss government requires companies to declare all imported or exported goods. Today, 96.5% of these declarations take place electronically with the e-dec system. The information systems of the companies who import or export contain a module which communicates with e-dec. Over 1500 systems are connected to e-dec, processing approximately 200,000 declarations per day. Through the importing of goods, e-dec accounts for customs duties and value added tax of about 23 billion Swiss Francs per year.

Electronic Customs Clearance

How does electronic customs clearance work? For example, a Swiss dealer wants to import automobiles from Germany into Switzerland. The entire business process, from purchase at the manufacturer to sale to the customer, is transacted in the dealer’s information system. At a point in this process an electronic customs declaration is prepared and sent to the e-dec system. Such a declaration is a very comprehensive electronic document which is composed of up to 200 data elements per contained good. For example, the value and weight of the good must be declared, or in the case of automobiles, the vehicle identification number. E-dec automatically processes this message and sends back the necessary documents for the import within a few seconds.
The customs declaration—e.g. for an automobile—undergoes a process in e-dec composed of several services. One of these is the plausibility analysis service which checks whether the information from the customs client is correct, e.g. is the value of the automobile plausible?

![Diagram of the e-dec platform](image)

The business rules for checking the customs declaration are recorded by the customs professional in the rule editor and stored in the rule repository. In the plausibility analysis service, the rule engine compares the information of the customs client with the business rules stored in the repository within fractions of a second. For example, if the specified value of the automobile is too low, the plausibility analysis generates an error message.

**Business rules for plausibility analysis**

The e-dec platform consists of various processes (e.g. import, export, postal traffic) which are composed of different services. One of these services is plausibility analysis (see graphic). This plausibility analysis service checks—in a fraction of a second—the technical correctness of the transmitted data on the basis of a variety of business rules. In the case of the aforementioned automobile import the service checks, among other things, whether the vehicle identification number has been specified for each vehicle and whether the declared import value lies within a specified realistic range.

Currently there are around 700 business rules. These rules change at regular intervals on the basis of statutory regulations and the requirements of various federal agencies. Thus one important requirement is a flexible adaptation of the rules independently from regular software release cycles.

**Flexible Administration of the Rules with BRMS**

How can so many rules be efficiently and reliably developed, tested, administered and deployed? Since 2006 the Swiss Federal Office for Information Technology (BIT) has been using a Business Rule
Management System (BRMS) for this task. In July 2011, the plausibility analysis service was redeployed to the IBM WebSphere JRules Business Rule Management System (BRMS).

For administration purposes, all business rules are stored in a central repository. Various rule editors allow developers and customs professionals to jointly create new rules or adapt existing ones. These rules are then tested and released for deployment to the production environment. Thus, in a short period of time changes can be quality assured and put online.

The customs clients must be familiar with the plausibility rules in order to make correct declarations. The BRMS generates detailed rule reports which are made available to clients on the Swiss Customs website.

Benefits of the BRMS at e-dec
Is the use of a complex BRMS worth it? The following benefits were apparent from the experience at e-dec:

- The plausibility analysis service and the rules contained therein are reused by several customs clearance processes, which increases the efficiency of the administration of the business rules.
- The business rules systems provides a good overview of the rules in all stages of development. This contributes to quality assurance.
- The web-based user interface enables customs professionals to administer the rules. This guarantees flexibility and speed in the adaptation of the rules.
- The rule execution provides extremely high performance and is very scalable.
- The BRMS itself did not require development and was able to be very quickly integrated into e-dec.

The architectural approach for administration and execution of business rules and the specific product selected have proven themselves in practice. The use of a BRMS in other systems of the Federal administration with business rules can bring various advantages and is recommended by the e-dec team.

Example of a business rule in the rule editor in IBM WebSphere JRules (Screenshot).
Benecard builds a smarter claims process with WebSphere ILOG JRules

Benecard, a leading provider of prescription benefit programs, chose the IBM® WebSphere® ILOG® JRules Business Rule Management System (BRMS) to streamline and automate its claims process. The company works with an expansive network of pharmacies nationwide and provides prescription drug programs and specialized services to organizations across the public and private sectors.

Challenge
Processing and settling claims is a critical service for Benecard and its customers. A claim transaction encompasses everything from service and regulatory compliance to the impact on a company’s profitability and ability to attract and retain customers.

Ensuring that claims are processed and settled in a timely manner with the utmost transparency and accuracy was a key requirement for Benecard. Moreover, it wanted to make certain that the claims system it had in place delivered the agility to support a complex distribution channel, create and deliver customized programs to public and private sector clients, and meet changing market, regulatory and corporate demands easily.

Solution
To address its requirements, Benecard built a new claims system in a Service Oriented Architecture (SOA) based on IBM WebSphere ILOG JRules. The company aimed to improve collaboration between business and IT by allowing senior pharmacist business users to work with a business analyst to define, test, create and maintain business rules. These business rules are used throughout the claims process for validation such as member, claim and clinical data verification; pend management; claim segmentation and assignment; adjudication; payment and settlement; overrides; notification triggers; and automation of regulatory guidelines that vary from state to state, including Health Insurance Portability and Accountability Act (HIPAA) compliance. Plus, IBM WebSphere ILOG JRules supports better reuse and creation of shared decision services to help improve the efficiency of adapting claims processes over time.

“We chose Websphere ILOG JRules for its ease of use and advanced rule management features that address the needs of both our business and IT users.”

— Michael Perry, CIO, Benecard
WebSphere ILOG JRules is deployed on WebSphere Application Server in an SOA. Business rules are maintained in the central rule repository, a key component of ILOG JRules, enabling the company to easily structure and deploy rules across the claims process for greater consistency and accuracy in both batch and online environments. DB2 is used as the standard database with IBM Cognos for business intelligence and reporting capabilities.

The new BRMS-based system allows Benecard to obtain a comprehensive audit trail of rules and decisions rendered. Moreover, users can easily structure and deploy business rules that govern the claims process at any given time. This level of control enables claims to be settled quickly and accurately resulting in greater operational efficiency and customer satisfaction.

**Benefits**

- Speed-to-market gains of over 70 percent
- Reduction in claims processing time and costs by 30 percent
- Increase in pass-through rate by over 80 percent
- Ability to roll out new programs and add members faster
- Obtain comprehensive audit trails of rules and decisions rendered at any given time
Athletes’ Performance gets people fit with scalable technology

IBM WebSphere ILOG JRules business rule management system automates real-time training data

Overview

The need
Cost-effectively codify expertise residing in spreadsheets and the collective knowledge of leading experts in behavioral sciences, fitness, nutrition and physical therapy to expand personalized fitness product offerings to a larger wellness market.

The solution
When developing its leading corporate wellness offering, company deployed IBM WebSphere ILOG JRules, which utilizes training and nutritional logic to customize individual programs for the company’s clients as they proceed through their wellness programs.

The benefit
- Boosts customer retention rate to 92 percent
- Enables a single performance specialist to work with 16 clients at a time
- Leverages decades of experience to a larger audience

Athletes’ Performance Inc. has pioneered a unique, integrated approach for performance training, nutrition and physical therapy for elite and professional athletes—as well as the general public. The company operates four training facilities in Arizona, California, Florida and Texas, and also provides an extensive menu of on-site services.

“Olympic and professional athletes come to us for our in-depth training programs,” says Jon Zerden, chief technology officer at Athletes’ Performance and Core Performance. “And through our wellness offering, Core Performance, we deliver these proven training components to consumers—through our website, at Core Performance training facilities and through corporate wellness programs.”

Data scalability opens new markets
But as Zerden notes, ensuring broad consumer market adoption for specialized athletic training programs faces two immediate hurdles. Athletes’ Performance management needed to be able to adapt its programs to a larger audience—yet the company had to make sure that its reputation for extremely high-quality training was not compromised.

“Scalability is essential for entering new and highly competitive markets,” says Zerden. “Getting ready to compete in the consumer market called for automating the bulk of our professional-level coursework so we could reach more customers through mobile devices, web devices and exercise equipment with interactive sensors.”
BRMS provides rules-based data capture and automation

Finding a way to automatically capture knowledge from the company's over 100 practitioners initially seemed a daunting task for Zerden and his team. And once captured, trainer information had to be transformed into practical, user-specific counseling tailored to individual consumers, which Zerden and his colleagues found to be time-consuming, potentially inaccurate and difficult to customize.

“We came to the conclusion that we needed a rules-based approach to embed intelligence within our training systems in real time and on the fly,” Zerden says. With this realization, the IT team at Athletes’ Performance decided to deploy IBM® WebSphere® ILOG® JRules Business Rule Management System (BRMS), which enables the company to automate guidance—such as best practices for exercise and diet—while also being able to automatically apply customized decisions for specific training situations/user personalities in real time. “The JRules BRMS was the only solution capable of both automating as much guidance as possible and still preserving flexibility for remote and on-site coaching staff,” Zerden says.
Training methods become deliverable through multiple channels

Deployment of the JRules BRMS solution helped ensure that all workout recommendations are immediately accessible to customers interacting with exercise equipment touch screens, as well as mobile devices and web browsers. This, says Zerden, was made possible by loading the JRules BRMS solution with 36,000 training rules taken from multiple Excel spreadsheets holding the collective knowledge and experience of company fitness specialists.

By implementing the JRules BRMS solution within a SOA/REST architecture that relies upon cost-effective open-source tools, the company’s IT team was able to quickly deploy a specialized rules engine. Individual customer information is captured from daily evaluations and questions, and is fed into a customized program based upon the company’s Core Performance training methodology. This Core Performance Prescription Engine (CPPE) then makes real-time modifications to direct training regimens by taking into account factors such as pace, schedule changes, injuries and general health.
Zerden says the solution also helps ensure that fitness staff can refine training information on an ongoing basis. “Automation of the bulk of our wellness programs means that we can constantly improve our position as the leader in integrated fitness and nutrition programming for elite athletes and leading corporations alike,” he says. “With the help of a single IT analyst, our Performance Innovation team composed of professional trainers can quickly make changes in the system—and the updates are instantly proliferated worldwide to our customers.”

**More proof points expand market share**

Based on the JRules BRMS solution, the company's Core Performance Prescription Engine is now the world's first intelligent and adaptive rules-based system for delivering optimal and consistent physical training globally in real-time. The CPPE currently hosts approximately 36,000 training rules for customizing training programs for consumer clients—and provides the company with the ability to prove health gains and expand market share.

“The JRules BRMS system gives us the ability to better promote our services with corporate accounts,” Zerden says. “We can now collect data points on how training positively affects triglycerides and other blood markers, which makes a strong case for retaining our programs to improve employee health.”

**Reliable governance upholds brand standards**

The JRules BRMS also helps ensure consistency of service and training throughout the company's facilities, which is critical for the Athletes' Performance brand. “BRMS tools were really the only option to make each environment consistent from facility to facility or across different types of training programs,” Zerden says. “The solution put a governance process into place, so our customers know that no matter where they’re working out—or whether they’re in one our facilities or interacting with a mobile device—they can rely upon the same rigorous training protocols that increase physical fitness.”
New service capabilities hit game-changing retention levels

Adopting the JRules BRMS also helped ensure that the company’s highly sophisticated service offerings could successfully be scaled, customized—and offered at competitive prices to retain growing legions of amateur athletes and corporate clients, Zerden says.

“Health club customer retention rates hover around 60 percent annually, which means that competing organizations typically lose 40 percent of their membership base every year,” Zerden says. “Thanks to the power of the JRules BRMS solution, we’re able to automate wellness guidance, which allows a single performance specialist to provide up to 16 clients at a time with a highly cost-effective wellness experience. As a result, we can boast 92 percent annual membership retention, so our attrition rate is eight percent—which is an extraordinary customer satisfaction metric for any company targeting consumers.”

BRMS scouts data for future opportunities

Zerden’s team continues to discover new ways for JRules BRMS to capture and deliver critical training information. “The data elements we’re now working with include biometric movement patterns, which we can use to illustrate how our programs reduce insurance costs and employee absenteeism,” Zerden says. “Information like this will go a long way to expand our training offerings in the future. And we also believe some of our findings will help related health and fitness research fields. As far as we can tell, we’ve just begun to scratch the surface of opportunity with our new data-mining capabilities.”
For more information
Contact your IBM sales representative or IBM Business Partner, or visit us at: ibm.com/brms

For more information on Athletes’ Performance, visit:
- www.athletesperformance.com
- www.coreperformance.com

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Please Recycle
Today’s consumers demand more from their banks. They want products and services tailored to their personal needs. They want convenient, consistent service, whether banking at a local branch, on the web, or by mobile phone. And they also want to be rewarded for their loyalty.

Many banks aspire to such a vision, but few can deliver on it. With critical data locked in silos across departments and applications, each banking division has a limited perspective of the business. But in a bold competitive move, BNP Paribas, a European leader in global banking and financial services, is building an agile infrastructure that will allow it to quickly build new product offerings and deliver targeted promotions.

“There is always someone who will challenge you on services,” says Vladimir Milojkovic, Prime Contracting Project Manager, BNP Paribas. “We needed to gain control of our data if we were to create on-demand offers for our clients.”
**Focusing on the customer**

To deliver on its strategic vision, BNP Paribas had to place the customer at the center of each transaction. It meant creating a flexible framework that would allow bank staff to:

- Quickly construct grouped offers mapped to customer requirements, such as providing home insurance with a mortgage.
- Personalize fees based on the customer’s profile and service channel, such as giving discounts to some clients.
- Develop multibrand customer loyalty offerings that can be delivered on demand. These offerings would allow the bank to provide special incentives—such as waiving a monthly fee for a specified period—to clients who use several BNP Paribas products.

“We are building a flexible solution to ‘sell’ to our businesses in different countries,” says Cyrille Oudard, Head, Master Data Management, Retail Banking, BNP Paribas.

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**Business benefits**

- Enabled bank to personalize offers through any channel—Internet, mobile phone, branch and more—based on each customer’s profile
- Reduced time to market for new products from weeks to days
- Improved competitiveness with the ability to flexibly and rapidly evolve offers based on market conditions, competitive actions and new regulatory requirements

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**Smarter Banking: Personalizing service across channels**

**Instrumented**
Captures, enriches and maintains product, channel, pricing and other information in a single repository.

**Interconnected**
Provides a trusted source of data and decisions across service channels (Internet, phone, branch) so that customers receive consistent service at all points of contact.

**Intelligent**
Applies advanced business rules to customize product offers and fees based on each customer’s profile and requirements.
Selecting the right partner

The team launched an evaluation and a proof of concept (POC) and compared solutions from several vendors, including IBM. Members from BNP Paribas’ IT, business and procurement teams participated in the process. Solutions were rated on product functionality, technology and pricing.

Portability and flexibility were essential given that financial rules and regulations differ from country to country. “We needed a platform that could be reused regardless of the country or the types of products,” says Vladimir Milojkovic. “This is a main challenge because the products which are distributed in Ukraine, for example, are not the same as the products in Italy.”

After an extensive review, IBM Software was selected. “IBM provided the best solution for our needs and was experienced in managing product delivery across multiple countries,” says Cyrille Oudard. “The project’s construction phase was launched in July 2009. We delivered a first release for user acceptance testing in the Ukraine by mid-November and a ‘go-live’ by the end of 2009.”

Rapidly building new products and promotions

Using IBM Software, the bank will be able to create, manage and access master data—the data that is commonly shared across systems and product catalogs. It could also quickly define product offers, as well as the complex relationships between them and the conditions under which they are sold. Customers will receive product offers filtered according to their profile and eligibility.
The solution enables business users, instead of IT, to generate, change and manage offers—a critical factor for reducing time to market. “We cannot afford every update being an IT project,” says Cyrille Oudard. “With IBM Software, our business users have the tools to reduce the time from idea to delivery.”

IBM InfoSphere™ Master Data Management Server for Product Information Management (“MDM Server for PIM”) provides the single, up-to-date repository of product and pricing information. Business processes also enable the bank to confirm grouped offering compatibility, base fee enforcement and conditional eligibility. Once validated, new offers can be deployed in the core banking system and made available to business applications across all channels and operations (online, branch, back office, etc.). Multilanguage and multicurrency capabilities enable the bank to deliver a generic asset that will be integrated with the core banking system across all countries where it operates.

“MDM Server for PIM provides a framework that allows our business users to work faster inside the product and offer catalogs,” says Vladimir Milojkovic. “They don’t have to wonder what to do or where to go when building grouped offers.”

IBM® WebSphere® ILOG® JRules business rule management system allows the bank to precisely define highly variable decision logic, such as eligibility and pricing rules. This enables it to target the right product or offer to the right person or adjust service fees and interest rates based on competitive activity in the marketplace. Because rules are authored and maintained in a business vocabulary and accessible via a web-based interface, business users can easily review, modify and deploy rules for use across multiple systems. Business users are provided with comprehensive governance capabilities to effectively manage large numbers of frequently evolving and interrelated rules, while also being able to work collaboratively with both technical and nontechnical roles involved in rule management.
Customizing services on demand
Through this strategic initiative, BNP Paribas will reduce time to market for new products and promotions so staff can flexibly and rapidly evolve offers according to market conditions. “Product changes and offers can be created almost in real time and deployed very quickly,” says Vladimir Milojkovic. “We will be able to reduce time to market for businesses from weeks to days.”

The most significant benefit, however, will be experienced by consumers, who can receive personalized offers through any service channel—on demand. For example, when the bank renews a client’s credit card, the system will identify if the client is eligible for premier credit services and offer special terms for upgrading. The system can also recommend new products based on the client’s profile, such as offering an investment account to clients with a large balance in their savings accounts. For BNP Paribas, this will be an important differentiator in a highly competitive market.

“Every bank provides packages to their customers,” says Vladimir Milojkovic. “But we can really target the right product to the right customer. If you can provide the best product for each customer’s needs, the customer will be satisfied and will reinforce loyalty with the bank, leading to more profitability.”
For more information

To learn more about how IBM can help you transform your business, please contact your IBM sales representative or IBM Business Partner.

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- ibm.com/brms

For more Information on BNP Paribas, visit: www.bnpparibas.com
HealthNow Builds a Smarter Member Enrollment Process with WebSphere® Process Server and ILOG® JRules

HealthNow New York is the leading healthcare company in Western New York. Since 1936, it has been a pioneer in providing quality healthcare services to companies and individuals in the region. With approximately 680,000 insured members, HealthNow New York provides a full spectrum of healthcare services including disease and care management, pharmacy benefit management and physician and hospital quality incentive plan among others.

Challenge

A changing regulatory landscape, customer demands and cost pressures continue to impact health insurance companies of all types and sizes. Carriers are increasingly looking to streamline their internal processes to address growing complexity in healthcare and create greater efficiencies to remain competitive.

Like most health plans, HealthNow had multiple legacy systems, manual and disjointed processes in place. This was having an impact on their ability to respond quickly to changing regulatory, internal and external mandates. Integrating and maintaining these systems was a costly and resource-intensive endeavor. Moreover, business rules that

“Providing innovative products and services while improving the availability, quality, and cost of healthcare is central to our corporate vision. We chose to partner with IBM as their suite of technologies met our business and IT objectives at an enterprise-wide level. WebSphere Process Server and ILOG JRules have enabled us to automate, optimize and monitor critical business decisions within our core processes such as member enrollment while delivering tangible benefits.”

governed core processes such as member enrollment were hard-coded making it difficult to implement policy changes and perform critical tasks in a timely and cost-effective manner. The enrollment process was predominantly paper-intensive with several manual touch-points thus elevating the risk of errors and delays.

Creating a streamlined and efficient enrollment and plan change process for its members was a key goal for HealthNow. Furthermore, the company wanted to ensure that the enrollment system would deliver end to end visibility into the process with the utmost of agility and speed to support its near and long term business and IT objectives.

Solution
To address their requirements, HealthNow built an agile BPM and BRMS-based member enrollment system in a service-oriented architecture (SOA). IBM® Websphere® Process Server and IBM® ILOG® JRules are used to automate, optimize and monitor key business decisions throughout the enrollment process from determining eligibility and applicable coverage, easily identifying pend enrollment and exception cases, processing new member application and current member policy changes, to enforcing regulatory compliance, disseminating tasks and triggering notifications as required.

Building a flexible architecture which facilitates the creation of shared decision services was central to achieving this objective. This will enable HealthNow to ensure that regardless of where the transaction is coming from; enrollment and regulatory guidelines are consistently and accurately enforced across the process and channels with the utmost of speed and transparency. Moreover, the carrier now has the foundation in place to extend the usage of business process management (BPM), business rule management system (BRMS) and business intelligence (BI) technologies to other processes in the future.

Benefits
With the new Websphere Process Server and ILOG JRules based member enrollment system in place, the company has experienced such benefits as:

• Speed to market gains of over 50%
• Ability to introduce new behaviors into systems in days rather than weeks or months
• Reduction in enrollment time and administrative costs
• End-to-end visibility into the enrollment process resulting in greater clarity, accuracy and consistency
• Increased collaboration between business and IT
• Productivity gains with fewer people and man hours spent to create, test and deploy rules
• Comprehensive audit trail of rules and decisions rendered
Texas Education
Agency responds to
rule changes 90x faster
with IBM ILOG

The Texas public school system has been in existence since 1854, and
today is one of the largest public school systems in the United States,
with 4.6 million students in 1,200 school districts and 320,000 school
staff. The Texas Education Agency (TEA) implements educational pro-
grams according to the laws and business rules that are passed down by
the Texas legislature and the Texas State Board of Education.

The legislature meets every two years, and the Board of Education
meets more frequently, which means that the rules change quite often.
This presents a challenge to programs which the agency manages, such
as the Teacher Certification Program.

The Teacher Certification Program used to be a separate agency—
the State Board of Educator Certification Agency—and later became
part of the TEA. It manages teacher credentialing, serving as a cus-
tomer relationship management system for educator certification.
The program keeps track of teacher training and certificates, and
administrates the process by which educators take tests and receive
their certifications.

Responding to fast changing regulatory
environment

“Because of the changing regulatory climate for teachers, we have
to be very responsive in deploying the rule changes into our applica-
tions,” says Rick Goldgar, chief technology officer and deputy chief
“Changing rules used to take up to six months or more, but by segregating the rules from the code these changes can be done and tested in days, with faster time to production and much lower maintenance costs.”

—Rick Goldgar, Chief Technology Officer and Deputy Chief Information Officer, Texas Information Agency

information officer for the Texas Education Agency. “Teachers need to know what they have to do in order to be certified. Sometimes this involves changing their curriculum when they are still studying to become teachers, so they need to have clear guidance as soon as a new regulation is passed.”

However, the TEA has a legacy of many years of rules programmed into the teacher certification application. There are actually three applications that were developed separately. A legacy application was written by the State Board of Educator Certification Agency before it became part of the TEA. An enhancement of that application was written as a separate application and interfaced with the legacy code. And a third separate piece was the reporting application.
The rules governing teacher certification were buried within thousands of lines of C#, ASP, Java™, XML and SQL programming, and it literally took months to find the right code in order to change it. “It was not uncommon for us to take six months to find the right code and issue the revised guideline,” says Goldgar. “Sometimes we would make changes in the application just before the new rule went into effect, which didn’t give the teacher a lot of time to plan.”

**Easy-to-maintain business rule management system**

TEA needed to segregate the business rules from the application to make them easier to maintain. “We wanted to formalize the rules in business language that subject matter experts—our customers—could understand and help maintain,” says Goldgar. “In addition, we had to minimize the number of steps required to go from a change in legislation to its implementation.”

The TEA looked at several choices for managing their business rules, including some open source choices, and selected IBM® WebSphere® ILOG® JRules Business Rule Management System (BRMS). “We undertook a project of Business Process Management using the JRules BRMS, which involved examining the way we were doing our current business and looking for ways to make it better,” says Goldgar. “Since the business rules were driving our business, we had to come to a common understanding of what the business rules were.”

The initiative consisted of several steps. Goldgar’s team had to understand the context for a business rule, what it is used for and how to construct one. The rules had to be made rigorous. There could be only one way to interpret the rule. The team had to segregate the rules into...
the JRules BRMS, so that there would be one place for them to be managed. Finding common rules patterns enabled the team to re-use those patterns many times to simplify maintenance. In addition, the team had to represent the rules in common business language which would empower subject matter experts to maintain the rules.

**A magnitude faster implementation of new rules**

Business rules exist within a domain which defines their context. They use a formal conditional syntax which includes an antecedent and consequence. The antecedent is an “if-then” clause and the consequent has one of multiple values. Words such as “educator” and “student” have specific meanings.

“We have what looks like English in JRules and it’s all in one place,” says Goldgar. “If a person wants to find out whether an individual is qualified to get a certification for teaching gifted and talented students, they invoke whatever rules relate to that. And the place they go to look them up is in the WebSphere Rule Team Server where they are maintained in plain English instead of being embedded in a bunch of Java or C# code.”

The difference is dramatic. “Changing the rules used to take up to six months but with ILOG it takes days,” says Goldgar. “Overall, we’re spending much less time on maintenance.”

**Building a service oriented architecture**

TEA is using a service oriented architecture (SOA) to deploy the JRules Rule Execution Server with IBM WebSphere Application Server, IBM WebSphere Business Process Modeler and IBM WebSphere Process Server.
“Over time TEA is shortening development cycles and lowering costs, doing more with less by using a component based architecture to refactor old systems and develop new systems,” says Goldgar. “Tools like the JRules BRMS and other WebSphere products allow us to go quickly and directly from formalized business needs to deployment.”

“SOA allows us to disintegrate a monolithic application to a set of services that are working on the WebSphere backbone. The rules interface easily using JRules on that backbone.”

With IBM WebSphere ILOG JRules BRMS, Business Process Management and the IBM set of tools for developing a service oriented architecture, TEA has a new method for dealing with changes in the regulatory environment. “We’re working smarter because our customers get what they want directly,” says Goldgar. “IBM gives us the tools to go to simple English business rules in JRules that implements changes the customer wants. That’s a huge benefit to the teachers who use the system because it’s more agile and responsive to their needs.”
For more information
Contact your IBM sales representative or IBM Business Partner, or visit us at:
ibm.com/software/websphere/products/business-rule-management

For information on Texas Education Agency, visit: www.tea.state.tx.us/

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Please Recycle
Based in Tallinn, EMT is one of Estonia’s leading mobile telecommunications providers; it owns and operates network infrastructure and develops and markets services and solutions both within Estonia and internationally. The company has more than 80 retail stores and branch offices across the country, and employs 500 people.

EMT’s success can partly be attributed to its sophisticated approach to marketing, which leverages numerous channels to communicate special offers and promotions to existing and prospective customers.

“Whatever method the customer wants to use to interact with us – whether they visit one of our retail stores or our e-shop, or log in to our self-service Web site, or call our customer service team, or just look at their phone bill – we are able to make them the same offers,” explains Alar Jõeste, Project Manager for the Development Team at EMT. “The systems that push these offers out through the channels use a complex set of business rules to decide which marketing content is displayed to which customers – for example, corporate customers might be offered a discount at one rate, while consumers are offered a different rate. At any given time, there could be more than 15 simultaneous campaigns running through EMT’s channels.”

Empowering non-technical staff
New campaigns often require new business rules to be created, or existing ones to be modified. The rules are based on Java code, and whenever the marketing team wanted to launch a campaign, it was necessary to submit change requests to the IT team.

“There were several different repositories for business rules, and it could be difficult just to find the right lines of code – let alone change them!” says Alar Jõeste. “Even a minor change could often require significant development effort, distracting our IT team from more
strategic projects. Moreover, these change requests became part of our monthly development cycle, so it could take up to a month for the new rule to be tested and released. This made it difficult for marketing to react quickly to the latest trends.”

EMT began to look for a more efficient way to manage business rules. The team wanted to implement a single central repository for all rules, and also make it easier to implement minor changes without significant development effort.

“When we started looking for solutions, there was really only one product on the market that could deliver what we needed: IBM WebSphere ILOG JRules,” says Alar Jõeste. “It translates business rules written in Java into a simpler language, so even non-technical staff can make changes to them. We saw this as a huge advantage, because it would allow the marketing team to define their own campaign targets and reduce work for the IT team.”

Partnership for success
EMT worked with its long-term IT partner, Webmedia, to implement the WebSphere ILOG JRules solution. The initial design and deployment of the solution took around four months, and the system is still being developed and extended.

“Webmedia is one of our closest partners, and has been helping us with IT support and development for many years,” explains Alar Jõeste. “They understand the logic of our business and know how we work, so they are able to deliver solutions that really meet our needs. WebSphere ILOG reduces our development workload – so, ironically, we actually need less help from Webmedia than we did before. Nevertheless, Webmedia has embraced the solution, which shows that they have our best interests at heart.”

IBM WebSphere ILOG Rule Team Server provides a browser-based interface that enables business users to define, store and edit business rules easily, while Rule Execution Server deploys them into production safely. For developers, Rule Studio provides a more sophisticated Eclipse-based development environment, which can switch between rules and Java code effortlessly.

“More complex rule-changes still need to be implemented by developers – whether they are from our in-house team or from Webmedia,” says Alar Jõeste. “But in general, standard campaigns can be managed by the back-office without much help from us. As a result, it is now possible to create, test and release a campaign within a couple of days – significantly faster than when we were tied to the monthly release schedule.”
“IBM WebSphere ILOG JRules is making a major contribution to the efficiency of our marketing and sales processes, helping us get campaigns and products to market more quickly, reducing workload for our IT team, and reducing our reliance on external IT suppliers.”

— Tiit Tammiste, Chief Information Officer, EMT

Efficient and responsive
In addition to the benefits for the IT and marketing teams, the solution also helps dealers in the retail stores deliver better offers to their customers. Previously, the dealer would have to read through a list of all campaigns and decide which was most appropriate for each customer. Now, the solution can calculate the best offers for each customer based on their age, phone usage, professional status and other factors – so it is easier for the dealer to present a compelling offer, which may help to close the deal.

“As well as marketing campaigns, we are also using the WebSphere solution to manage the business rules that govern the sale of packages and services,” says Alar Jõeste. “There are many complexities here, and having a coherent set of business rules helps us make important decisions more easily.”

Tiit Tammiste, CIO of EMT, concludes: “IBM WebSphere ILOG JRules is making a major contribution to the efficiency of our marketing and sales processes, helping us get campaigns and products to market more quickly, reducing workload for our IT team, and reducing our reliance on external IT suppliers. It is hard to quantify the benefits, but we are confident that the ability to react more quickly to an ever-changing marketplace will help us reduce costs and gain competitive advantage in the Estonian telecommunications sector.”

For more information
To learn more about IBM software, contact your IBM sales representative or visit: ibm.com

To learn more about products, services and solution from Webmedia, visit: webmedia.ee
A credit card company headquartered in Seoul, Korea is one of the fastest-growing credit card companies in South Korea. The company is a Korean market leader in premium cards and is one of the largest card issuers in the country, having experienced an eightfold market share increase in seven years and nearly 8 million cardholders.

**The Opportunity**
As a countermeasure to continuous and fierce wallet-share competition, this credit card company needs to capture changes in customers’ behavior, execute effective marketing and eventually maximize existing customers’ value. To meet its goals, the company needed to introduce a new marketing management plan, integrate contact records and establish a fatigue rule management system that monitors all marketing touches to prevent overexposure to specific customers.

**What Makes It Smarter**
The client implemented a Campaign Management System, a Real-time Marketing System, and a Transaction Management (TM) System. The Campaign Management System was established to quickly share and analyze results from diverse campaigns/events to provide integrated offers across multiple product channels. The Real-time Marketing System was established after defining campaign fatigue and event-based marketing (EBM) to optimize response rates through targeted offers to each customer based on actual purchase patterns.

**Real Business Results**
- Allows the company to better manage the customer’s experience by detecting, in real time, various events that happen to customers and structuring the best actions to take in response
- Customer history is now available for real-time analysis, and available for cross-channel, integrated marketing and real-time marketing campaigns
- Increases the rate for marketing success by providing integrated offers, and sharing the results through diverse campaigns and real-time marketing activities
For more information
Please contact your IBM sales representative or IBM Business Partner.
Visit us at: ibm.com/financialmarkets
A property exchange and rental company provides vacation exchange and travel services to businesses and consumers; an exchange program; and vacation rentals, ranging from city apartments to country cottages and to villas. It also provides advisory, research, asset management, and turnkey solutions and services.

The complexity stemmed from legal contracts between the company and its participating affiliates that govern pricing and conditions of property usage. These rules are maintained by IT, not the business teams.

"Thanks to [IBM WebSphere] ILOG JRules, we now provide our 3.8 million RCI members with personalized vacations within seconds and real-time access to the world’s largest vacation exchange community."

— Senior Director—Information Technology, Property Exchange and Rental Company
**Solution**

The company sought to revamp its legacy system by moving to a Service Oriented Architecture (SOA). The company worked with IBM to implement the WebSphere ILOG JRules business rule management system (BRMS), allowing its business team to more easily maintain and deploy complex decision logic and achieving scalability for its member notification program.

The company chose to create an Enhanced Search application with the JRules BRMS as the back-end platform managing all the time-share rules. The new SOA platform features one central exchange platform and more than six services, including pricing and member communications services. The rules can now be written by business analysts, changed in real time and easily searched and monitored by the business teams. The company was also able to shift support from its costly call center to the more affordable web channel.

**Benefits**

- Support for more than one membership delivery mechanism increases revenue opportunities around membership and exchange fees
- Capability for business teams to maintain rules reduces IT overhead
- Improved member satisfaction through improved searchability across its network of affiliate properties and reduced failed searches
- Ability to change the rules in real time and respond to market changes in hours or days instead of weeks or months
- Decreased mainframe utilization costs—70 percent overall decrease and 98 percent decrease related to web channel shift
Healthcare company cuts the cost of injection therapy by 90% with IBM WebSphere Business Events

Overview

■ Challenge
Provide patients with delivery network for injection, injection training, and infusions of biologic pharmaceuticals and vaccines to lower cost of care and make regular injections more convenient, accessible and affordable

■ Solution
Implement Web-based solution enabling patients to be scheduled in an easy, convenient manner to appropriate clinical resources who follow consistent protocols

■ Key Benefits
98% reduction in effort and 1/3 the elapsed time to develop automatic monitoring of arrangements involved in injection therapy appointments;
90% less cost to care for patient with injection therapy compared to doctor’s office or hospital setting; exponential growth in revenue due to functionality of IBM WebSphere® Business Events

Thanks to a new class of specialty pharmaceuticals known as biologics, millions of patients are experiencing relief from conditions such as rheumatoid arthritis, cancer and allergies. But unlike oral medications, biologics must be injected, which creates a problem for many patients who need to receive the drug therapy on a regular basis.

Until recently, options for delivering injection or infusion therapy have been expensive and inconvenient.

Doctors, for instance, often charge their full office visit fees for an injection and only offer appointments during weekdays so that patients have to take hours off work. Hospitals are even more expensive, and “walk-in” clinics may not have personnel who are properly trained to deliver injection or infusion therapy.

Enter a new healthcare company that works with 10,000 clinics nationwide where medical personnel are trained to inject the biologics, as well as vaccines.

These clinics, which include urgent care, clinics and community pharmacies in 50 states, typically operate with 40 percent of their capacity underutilized. The company reserves these underutilized hours for patient injections, injections trainings and vaccines. Patients are scheduled through the Internet to the location closest to them and the time that’s most convenient, even in the evening or on the weekend, and the appointment is booked directly into the clinic of choice. The company charges a small fee for the service and arranges for health insurance plans to pay for most of it, leaving the patient with a small copayment—far less than what doctors and hospitals charge.
Looking for Business Event Processing software

“We started with a great idea, but it totally depended on our being able to implement a real-time software solution that would monitor, sense and respond to the entire patient care process ensuring everything was in order,” says the CIO of the company. Once the patient has made an appointment for an injection, the company has to confirm that the clinic’s certification and training are up to date, that the drug is available and received at the location and that the insurance company has agreed to pay. If any of those conditions have not been met, the software must be able to escalate the problem to the human level so that other arrangements can be made.

“In order for us to operate on the scale that we wanted to, the vast majority of administrative tasks had to be automated,” says the CIO. “I needed a complex logistics system with monitoring and I stumbled onto Business Event Processing [BEP].” BEP is a type of software that understands the information contained in the events flowing through an organization and acts on them. “Financial markets use BEP extensively,” the CIO says. “That’s how the credit card company knows to call you if an irregular transaction has been made with your credit card.”

Through his Internet research, the CIO discovered IBM WebSphere Business Events (named AptSoft Director for BEP at the time), a BEP product. “I looked at their demo online which pertained to a financial services situation, and I replaced the financial terms with healthcare terms. I found that I could use that model to monitor locations for clinical and operational readiness, to make sure that all of the events that need to occur for a patient to get a specific therapy, have happened and we would receive data back on the outcome of that event. We chose the product and it has worked out extremely well.”

The company has built all its applications on IBM WebSphere Business Events—all the applications that drive the business. Aside from the event processing application, the company has created applications for locating clinics, detailing the patient’s insurance plan, clinical configurators and monitoring the resources at the clinic.

The intuitive user interface of WebSphere Business Events provides drop-down menus for programming the logic of the events that must take place and their dependencies.
Exponential revenue growth

Today the company is in the process of increasing the number of clinics it deals with from 10,000 to 15,000. Through agreements with major health plans and employers, the company now offers more than two million Americans access to convenient, affordable health care for biologic services.

“We started off two years ago with nothing but an idea, and this year we’re doing a huge amount of business,” says the CIO. “And all of that is directly attributable to WebSphere Business Events.”

Healthcare solution for less time and cost

Prior to his work at the company, the CIO worked for a healthcare company building an application that was similar to the one he is working on for this company, but less complex. His team had 40 developers and the project took 18 months. At the company, the CIO and one other developer worked for six months to create the original product that launched the business—that’s a 98 percent reduction in effort and 1/3 the elapsed time.

The IT staff at the company numbers seven people. “We’ve kept costs very low even though we’ve grown astronomically,” says the CIO. “Today, when we want to sign up a new health plan, add clinics or enhance the application to include additional events, we can do the necessary programming with WebSphere Business Events in days or weeks rather than months, keeping the cost of doing business low.”

90 percent less cost for treatment

The cost to patients for treatment is as much as 90 percent less cost for treatment less than the cost of treatments in doctors’ offices and hospitals. “In one case, we saved a patient $800 per month,” says the CIO. And the complex process of enabling this service is handled automatically, virtually eliminating administrative overhead.

Most importantly, the company has shifted the healthcare model to one that is consumer driven. “The consumer has the incentive to make the right decision,” says the CIO. “This is really the best medicine for the healthcare crisis.”

Key Components

Software

- IBM WebSphere® Business Events
IBM increases revenue and improves customer service with IBM business event processing solution

Overview

■ Challenge
Identify errors in the IBM product and price catalog before they occur and impact customer satisfaction and revenue

■ Solution
Real-time enterprise enabled by business event processing capable of recognizing situations as they arise, interpreting them and responding to errors in the complex process of assembling product and price catalogs

■ Benefits
— Reducing errors in product and price catalog
— Increasing revenue with correct product information
— Reducing complaints and improving customer service
— Focusing less time on resolving problem reports

With almost 400,000 employees and close to $100 billion in revenue, IBM stands today at the forefront of an industry that is revolutionizing the way in which enterprises, organizations and people operate and thrive.

In a company of such size, delivering products to the marketplace is a giant task, one that depends upon providing complete and up-to-date product and price information to customers and business partners. The process of creating, updating and publishing IBM product and price catalogs is complex and highly distributed across applications in the enterprise. Providing the correct data depends on the synchronization of multiple data points in the information flow. In order for the process to succeed, the right information must be provided at the right time.

By resolving data quality problems and minimizing errors in its product and price catalog, IBM has helped to improve credibility, enhance customer satisfaction and increase revenue.
Otherwise, information in the catalogs is either missing or inaccurate, customers and business partners are frustrated, and revenue is lost. When something goes wrong, tracing back through the flow to determine when and where a failure occurred is complex and time-consuming.

**Becoming a real-time enterprise with BEP**

For this reason, it was advantageous for IBM to have a tool not only to help in problem determination efforts when problems occur, but also to help identify data errors before they impact customers.

In order to identify the patterns that may lead to catalog errors—and quickly and appropriately act upon the detection of these patterns—IBM needed to capture, evaluate and correlate multiple events from the various systems and organizations that are involved across the enterprise. The type of processing needed for this problem is called business event processing (BEP).

BEP is applicable in business scenarios where many components need to come together in real time in order for a task to be completed. A BEP framework can enable companies to become real-time enterprises, capable of recognizing situations as they arise, of anticipating and responding to threats before they occur, and of discovering and capitalizing on opportunities.

BEP detects complex patterns across many events and uses rule-processing algorithms for event correlation and abstraction. By looking at the relationships between the events, BEP systems can “connect the dots” and extract previously unavailable insights to enable faster and better operational decisions.

**The anatomy of situational awareness**

An **event** is an abstraction that represents the fact that something happened or is happening, such as a stock trade, a customer order or an address change. **Event producers** and **event consumers** in an enterprise environment consist of applications, files, databases, feeds, people, sensor data, etc. A computer application creates an **event object** (a computer record) to signal or report the event. A **notification** is a computer message (for example, an XML message) that consists of an event object.
The framework for performing BEP is called a Predictive Real-time Operational Business Intelligence Tool (PROBIT). The architecture is divided into layers of abstraction as follows:

- **The external environment layer** consists of all the applications and systems, including people, in the enterprise.
- **The sensing and actuating layer** consists of components that sense and act upon events in the external environment. Sensors detect and capture the events that happen in the environment and can also publish a notification message to the broker component in the connectivity layer. The actuator typically changes the state of the environment.
- **The connectivity layer** routes events from event producers to event consumers.
- **The higher-level sensing layer** is where we detect complex event patterns.
- **The cognitive layer** houses business rules and receives and deals with multiple events to detect patterns in the environment.

### Building predictive business intelligence

Having decided to use BEP to meet its data quality challenges, IBM had to construct a PROBIT using the necessary architectural components. These were close at hand, since IBM itself provides the software products that are needed to deploy a BEP solution.

Business activity monitoring provides visibility over operational performance. IBM WebSphere® Business Monitor is a comprehensive business activity monitoring software product that provides users with a real-time, end-to-end view of business processes and operations. WebSphere Business Monitor provides customizable business dashboards that calculate and display key performance indicators (KPIs) and metrics derived from business processes, business activity data and business events from a wide range of information sources.

IBM WebSphere Message Broker provides the connectivity layer—a powerful information broker that allows both business data and information, in the form of messages, to flow between disparate applications and across multiple hardware and software platforms. Rules can be applied to the data that is flowing through the message broker in order to route, store, retrieve and transform the information.

The core of the framework, or the cognitive layer, is IBM WebSphere Business Events, which serves as the event correlation engine for identifying patterns of interaction among multiple disparate events at run-time. The interaction sets, or event correlation rules, can be created with the WebSphere Business Events build-time environment. WebSphere Business Events provides a basis for full support of BEP.
Deploying a PROBIT in an SOA environment
In a service oriented architecture (SOA) environment, information services constitute most of the sensing and actuating for the event processing component. WebSphere Business Monitor can provide dashboard and monitoring functionality. Connectivity and interoperability services can be implemented using IBM Enterprise Service Bus (ESB) products such as WebSphere Message Broker or IBM WebSphere Enterprise Service Bus. The BEP services which consume and process events can be implemented using WebSphere Business Events.

Increasing revenue and improving customer service
By resolving data quality problems and minimizing errors in its product and price catalog, IBM has helped to improve credibility, enhance customer satisfaction and increase revenue.

IBM experiences many of the same challenges that its customers face, regardless of their size. Many companies can benefit by becoming real-time enterprises. IBM has documented the BEP framework and all the associated reference implementations as the basis for an engagement model allowing reuse of the framework in other service engagements to support any end-to-end business process.

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