



Smart Work in Action – Customer Stories



Smart Work in Action – Customer Stories

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A handwritten signature in black ink, appearing to read "Nancy Pearson". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Nancy Pearson
Vice President, BPM, SOA, WebSphere and Industry Marketing
IBM Software Group

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1-800-FLOWERS.COM: Creating an e-commerce platform for the future

Overview

■ **Business Challenge**

To better enable synergies between its 14 gifting brands, create greater business agility, and reach its goal of becoming one of the Top 10 among Internet Retailer Top 500 companies, 1-800-FLOWERS.COM, INC. needed to replace multiple, diverse, siloed e-commerce systems with a unified technology platform.

■ **Solution**

1-800-FLOWERS.COM teamed with IBM to implement IBM WebSphere® Commerce for two of its gift food brands as an initial proof of concept for the platform. The site, *thepopcornfactory.com* has seen a consistent rise in conversion since its November launch. Using knowledge gained from this first rollout, the company will take a greater role in transitioning most of its other brands to the new platform over the coming year.

■ **Key Benefits**

- Enables more rapid creation and deployment of retail Web sites
- Facilitates cross-selling between brands



1-800-FLOWERS.COM, INC. is the world's largest florist and gift shop, with revenues approaching US\$1 billion. The company is marked by its large-scale vision and forward thinking, positioning itself at the leading edge of trends with innovative marketing such as "green" initiatives that reward responsible consumer behavior. For example, its BloomNet® brand will, in exchange for a customer forgoing a BloomNet Florist paper directory, plant trees as part of a reforestation campaign. It is also introducing environmental responsibility as a theme across all of its businesses, with awareness campaigns on social networking Web sites.

The company has a thorough understanding of the "gifting" market space in which it operates, and sees great potential for synergy by offering multiple

“The platform will enable the individual brands to do things they would never have been able to cost-justify before. It’s going to give us unprecedented agility.”

— Steve Bozzo, CIO,
1-800-FLOWERS.COM

Making the most of brand synergy through shared technology

Business Benefits

- Enables more rapid creation and deployment of retail Web sites, allowing 1-800-FLOWERS.COM to try out new offerings with very little investment and risk
- Facilitates cross-selling between brands by unifying the underlying technology
- Provides the potential for information sharing across business units, opening up the possibility for more effective marketing to customers
- Ensures a consistent look and feel across the company
- Provides a rich, differentiated customer experience
- Reduces maintenance and development costs

“Tearing the walls down will enable us to go to market much more effectively. We’ll have a lot more shared information, and that will allow us to cross-sell much better.”

– Steve Bozzo

specialty brands. The 1-800-FLOWERS.COM strategy has been to grow three ways: organic growth, internal business development and strategic acquisitions. Today, it has 14 brands that sell everything from popcorn to gift baskets to gourmet food and children’s gifts.

The strategy has given 1-800-FLOWERS.COM a broad and diverse portfolio, but it also created a business challenge. To fully realize the benefits of its multibrand strategy, they must be unified behind the scenes, but as is usually the case, each new acquisition brought with it a different set of business processes and technology, resulting in a large number of siloed operations that were difficult to integrate.

To promote brand synergy, the company has undertaken “Fresh Digital™,” an enterprise-wide transformation initiative. “Unifying lines of business is a better approach to retail,” says Steve Bozzo, CIO at 1-800-FLOWERS.COM. “By sharing resources, systems and services, we accomplish a number of things. We become a more dynamic and agile enterprise because we’re breaking down internal barriers—which will also help us develop new business intelligence. We’ll be able to leverage resources and services of all kinds across the brands, from information to IT to shipping to warehousing, which will let us work smarter. And by consolidating, sharing and implementing more efficient technologies as well as implementing measures like sustainable packaging and reducing our reliance on paper catalogs, we’ll be able to reduce our environmental footprint, which puts credibility behind our green marketing efforts.”

Build versus buy

The first step on the consolidation path was to give the individual brands a common e-commerce platform. The 1-800-FLOWERS.COM brand itself uses a robust e-commerce system that was developed entirely in-house and which continues to serve the company very well, with a demonstrated ability to handle even the heaviest holiday volumes. It became clear, however, that using this platform to support all of the other brands was not the best use of the company’s resources. Rolling out the 1-800-FLOWERS.COM platform to its other brands would require replicating it over and over and it was simply not the most efficient way forward.

“We’re very happy with our core platform. Its performance proves we have the ability to create really strong e-commerce solutions, but fundamentally we’re not a software company—we’re a gifting company,” says Steve Bozzo. “It made more sense for us to find a best-of-breed e-commerce platform and work with it as

opposed to spending a lot of time and energy creating our own. Also, by going with an industry leader, we're leveraging its research and development dollars instead of using ours to reinvent the wheel as well as reducing the size and environmental impact of our infrastructure."

The company chose IBM WebSphere Commerce, in part because of the flexible and efficient way in which it functions behind the scenes. "With WebSphere Commerce, basically you've got a single Web site that handles all of the transactions," says Bozzo. "This central engine supports as many customer-facing Web stores as you like, and it's easy to add new ones or roll out new features across brands."

The platform, running on IBM Power Systems™ hardware, also has to integrate seamlessly with the company's existing systems. The 1-800-FLOWERS.COM platform will remain in place, and most of the other brands will be migrated to the new WebSphere Commerce-based system over the coming year. In the interim, everything needs to continue functioning transparently. To accomplish this, the service-oriented architecture solution includes IBM WebSphere Message Broker and IBM WebSphere MQ, which form an enterprise service bus that ties the legacy systems together.

The initial rollout supports two of the company's gift food brands, and took a total of only seven months with the help of IBM Global Business Services. "We went from Web 0.5 to Web 2.0 in only a few months; we could not have done that without IBM," Bozzo says. Knowledge transfer and lessons learned during the initial rollout will help 1-800-FLOWERS.COM to take a greater role in launching the remaining gift food brands. In this way, the company will be well prepared to launch future brand storefronts entirely on its own.

IBM was chosen mostly because of the capabilities of WebSphere Commerce and the expertise of IBM Global Business Services, but Bozzo emphasizes another important consideration: IBM Global Financing. "Because of the uncertainty we're seeing in the macro economy these days, making it easier to make the investment was a key decision driver for us. IBM was able to give us what we needed in that area."

Solution Components

Software

- IBM WebSphere Commerce
- IBM WebSphere Message Broker
- IBM WebSphere MQ

Hardware

- IBM Power Systems

Services

- IBM Global Business Services
 - IBM Global Financing
-

Smarter Solutions for Retail

To realize its vision of synergy among its 14 brands and meet ambitious growth goals, 1-800-FLOWERS.COM, INC.—the world's largest florist and gift shop—is deploying a single e-commerce platform. The solution, based on IBM WebSphere Commerce, is designed to replace multiple siloed systems. The new platform adds flexibility and agility, making it significantly easier to launch new Web commerce brands—allowing the company to try new business strategies with little risk. In addition, the shared platform facilitates cross-selling and information sharing across the enterprise, which helps 1-800-FLOWERS.COM gain maximum benefit from its many business units.



Supporting a visionary business strategy

The ultimate goal of the company's overall Fresh Digital™ initiative is to eliminate all of the barriers between business units, enabling the full sharing and leveraging of information across the entire enterprise and throughout its back-end systems.

"Over the long term, our customers will be able shop any of our brands, and we'll be able to ship from a unified location. That's a much more streamlined, efficient and smarter model," Bozzo says.

The implementation of WebSphere Commerce is a critical first step—the benefits of shared services that it offers will trickle down throughout the organization over time and enable new ways of going to market. "Tearing the walls down will enable us to go to market more effectively. We'll have a lot more shared information about buying patterns and customer profiles and that will allow us to cross-sell much better," says Bozzo. "Also, we'll be able to try new ideas with little risk. With the new platform, we can launch an entirely new brand fairly easily, because all of the e-commerce technology is already there."

The most significant impact of the platform, however, will be in the competitiveness it brings to 1-800-FLOWERS.COM by allowing the company to leverage best practices across the entire business. "The platform will enable the individual brands to do things they would never have been able to cost-justify before," Bozzo says. "It's going to give us unprecedented agility. We'll be able to re-merchandise our Web stores on the fly in response to competitive offers. That will make us much more relevant to the customer, which is critical. Customer expectations continue to ratchet up, and this new platform is positioning us to meet them going forward. We'll have an immediacy and responsiveness that will give us a real competitive advantage."

For more information

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Atlas Air's efficiency takes off with SOA-enabled business process management.

Overview

■ Business Challenge

After a decade of rapid growth, it was becoming an increasing challenge for Atlas Air Worldwide Holdings to adapt its operations to the dynamism and variability that are endemic to the air freight business. Atlas needed to become more agile by making its business processes more flexible.

■ Solution

Atlas worked with IBM to create an architecture that provides a foundation for Atlas to redesign and optimize its processes by mapping business functions to IT services. This Business Process Management (BPM) solution allows Atlas to be more responsive and nimble in meeting customer demands.



Based in Purchase, NY, Atlas Air Worldwide Holdings is the leading provider of outsourced freighter aircraft and operating solutions to the global air freight industry. Serving Asia, Europe, the Middle East, South America and the United States, Atlas manages and operates the world's largest fleet of Boeing 747 freighter aircraft.

■ Key Benefits

- *80 percent reduction from the expected cost of integrating operations with strategic delivery partners*
- *50 percent reduction from the expected time required to integrate operations with strategic delivery partners*
- *Significant expected reduction in operational costs*
- *Improved time to market with new business services*
- *Expected 30 percent reduction in application development costs*

The most basic mission of air freight carriers is to ensure that their aircraft and their cargo get to their destination safely and on time. That's the standard by which carriers are ultimately judged. Although this dimension of the business may be the most visible, below the surface it is guided by a complex operational plan whose components need to be intricately coordinated for the business to succeed. If air freight were a game of strategy, the board on which it is played is each operator's worldwide delivery and support network, which chiefly include the facilities and business services—ranging from maintenance and fueling for aircraft to catering and hotel layovers for crews—that

Business Benefits

- 80 percent reduction from the expected cost of integrating operations with strategic delivery partners
- 50 percent reduction from the expected time required to integrate operations with strategic delivery partners
- Significant expected reduction in operational costs
- Improved time to market with new business services
- Stronger decision support through increased transparency into key performance indicators (KPIs)
- Decreased application support costs associated with integration
- Potential for market differentiation via agility
- Expected 30 percent reduction in application development costs

“We have a lot of messages flying around in our operations, with a lot of them generated manually. We wanted to automate the routing and reuse of these messages to create a realtime environment—a digital nervous system for the operation of the company.”

— Jim Barrecchia, Sr. Director,
Business Solutions Architecture,
Atlas Air Worldwide Holdings

operators rely on to keep cargo moving. The greater the number of destinations each operator covers, the larger and more complex the required network of providers and potentially disparate systems to interface.

Perpetual motion

However, the real challenge for air freight operators is in choreographing the movement and availability of their most strategic assets—their aircraft and flight crews—as they move within their worldwide networks. What makes this challenge the most complex of all is that these networks are always in motion, usually according to plan, but sometimes not. The other defining characteristic of air freight operations is a high level of interdependency in terms of flight scheduling, the sequences of supporting processes, and a physical location of planes, people and cargo. If one of these elements goes out of sync with the others—a plane is delayed or a flight crew isn't in the right place—the ramifications tend to cascade into other parts of the operation. That's why, in such cases, operators need the capacity to refigure their plans, on-the-spot and on-the-fly, to mitigate the impact of unpredictability and to do their best to optimize the overall efficiency of their operational plans.

Atlas Air Worldwide Holdings, Inc. (www.atlasair.com), a leading provider of global air cargo assets and services serving over 300 destinations worldwide, saw one of its biggest challenges as achieving “dynamic optimization” by maximizing the efficiency and profitability of its operations in the face of changing inputs (e.g., new customer delivery requests) and operational constraints (e.g., flight crew rest requirements). Determined to prevent the growing complexity of its business processes from dragging down its efficiency, profitability and growth, Atlas realized it needed a business process management (BPM) capability to fundamentally change the way it translated information from across its operations into the best possible business decisions. It turned to IBM to help in this transformation.

To manage its business, Atlas relies on a large and diverse group of applications that handle highly specialized functions. Aircraft monitoring and cargo tracking systems provide critical telemetry data, while Atlas's commercial scheduling and crew scheduling systems determine where its planes and people need to be to meet delivery requirements. Its Maintenance, Repair and Operations (MRO) procurement system manages the repair and overhaul of its 37 aircraft, while its ERP system handles finance functions. The ongoing exchange of information with customers, vendors and governmental entities—such as U.S. Customs, the Transportation Security Administration (TSA) and air traffic controllers—is also central to its operations. For Atlas to run most efficiently, it ideally needed to matrix together all these critical and interdependent systems to work toward a common operational plan. But the reality was that the sheer number and diversity of its systems make

robust integration a major challenge. Because of this, Atlas relied on a mix of makeshift integration approaches and human intervention, in which case staff would manually triangulate information from different systems and attempt to make the right decision.

Grounded by growing complexity

In the 15 years since its founding, the strength of its core business model has enabled Atlas to grow in spite of its reliance on human judgment in its optimization decisions. But with Atlas entering a new phase of its evolution as a business, the inherent shortcomings of this approach were becoming more evident. Because of the multidimensional nature of air freight scheduling and routing decisions, the growth of the business leads to an exponential growth in the complexity of these decisions—making optimization much more of a challenge going forward. This issue also has a direct bearing on operational costs, from which Atlas was seeking to trim \$100 million as part of its growth strategy.

Atlas realized that while traditional cost control methods could get it part way there, it could only fully succeed by fundamentally changing its business and decision-making processes—and the systems it relied on. At the project’s outset, Atlas and IBM established the high-level goal of making its business processes more automated and data-driven. IBM’s key role was to design and deploy a service-oriented architecture (SOA) that would provide the foundational capabilities necessary for BPM. Process automation was, in and of itself, not the goal. Atlas instead wanted what it called “managed flexibility,” an architecture through which it could create or adapt workflows, decision-support tools and business processes as situations changed—a condition which, in the air freight business, means most of the time.

IBM’s answer was to create an architecture that abstracted Atlas’s core backend applications into services that can be reused to create entirely new applications via SOA. On a practical level, this means Atlas can take functions that had been spread across multiple platforms—requiring each to be accessed separately—and unite them into a “composite” application workflow. This SOA was built on Atlas’s existing IBM System x™ servers using WebSphere® Integration Developer for tooling, as well as a diverse range of other technologies. IBM WebSphere Enterprise Service Bus (ESB) is used to provide a common connectivity platform between applications, handling the routing, mediation and transformation of information. IBM WebSphere MQ provides the basic connection messaging protocol between applications. The solution also uses IBM WebSphere Service Registry and Repository software to manage the various business services in a policy-driven SOA governance framework.

Solution Components

Software

- IBM WebSphere Process Server
- IBM WebSphere Application Server
- IBM WebSphere Enterprise Service Bus
- IBM WebSphere Integration Developer
- IBM WebSphere MQ
- IBM WebSphere Service Registry and Repository
- IBM WebSphere Business Monitor
- IBM WebSphere Business Modeler
- IBM WebSphere Portal Server
- IBM WebSphere Portlet Factory

Servers

- IBM System x

Services

- IBM Software Services for WebSphere

Timeframe

- Deployment of integration infrastructure: 5 months
- Business process redesign: In progress

Smarter Travel & Transportation

To keep ahead of the constant changes of the air freight business, Atlas Air Worldwide Holdings created an SOA that simplified the integration of its business processes, enabling a quantum improvement in Atlas’s ability to choreograph the complex movements of its people, planes and cargo. With this BPM capability, Atlas was able to shift much of its resource focus from supporting applications to targeting business process improvements.



Targeting process improvement

On top of this SOA foundation, Atlas created a full BPM solution. The team used IBM WebSphere Business Monitor to create dashboards to track key performance indicators within each process, and WebSphere Business Modeler to create detailed maps of its process flows to identify targets for deeper process improvements, a task beyond the capability of any employee. Once such targets have been found, Atlas can use IBM WebSphere Process Server and IBM WebSphere Portlet Factory to rapidly assemble abstracted services into new business services. This literally opens the door for a new level of operational efficiency, with realtime data—such as telemetry readings from a cargo door opening at an airport halfway around the world—triggering a cascade of other, dependent processes. It also means Atlas can get an immediate and comprehensive view of the financial impact of an operational decision—such as holding up a flight (and risking late charges) in order to accommodate a last-minute shipping request—a degree of decision support the old system could have never achieved.

With its BPM architecture in place, Atlas is poised to achieve a much deeper level of process optimization, helping it to strengthen its margins by achieving significant cost savings. Atlas's increased business agility will also enable it to seize market opportunities rapidly and—by significantly reducing its application development costs—more cost effectively. A key example is its recent partnership with DHL Express (the world's leading express and logistics company), which was contingent on Atlas's ability to mesh its systems with those of DHL Express. Because both companies used IBM WebSphere MQ—a key element of Atlas's SOA strategy—Atlas was able to cut the time and cost of integrating with DHL by 50 percent. To Jim Barrecchia, Sr. Director of Business Solutions Architecture, one of the most telling signs of the success is the way Atlas was able to shift much of its resource focus of supporting applications to targeting business process improvements. "Our BPM solution enables us to constantly target opportunities for process improvements and gives us the flexibility to realize them," says Barrecchia. "We're now better aligned for growth and profitability—and IBM helped us get there."

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Auto parts manufacturing

Overview

A leader in the automotive industry makes auto parts for two types of customers: original equipment manufacturer (OEM) carmakers and aftermarket parts retailers. Supplying them has resulted in a network that includes a central distribution center (DC) in China, five regional warehouses and 20 warehouses worldwide.



■ **Business need:**

The company's supply chain is currently configured to efficiently serve OEM customers, but it is inadequate for parts sellers. The manufacturer needed a supply chain strategy that accommodated both types of customers and reduced supply chain costs.

■ **Solution:**

The company turned to IBM® ILOG Inventory Analyst to determine an optimal inventory positioning strategy. A baseline was created for the current supply chain network and used to produce the desired strategy. In addition, Inventory Analyst identified the true inventory drivers with the most significant

impact on the customer's supply chain costs: inventory positioning (30 percent), synchronization of order and delivery times (0-19 percent), changing transit times (9 percent) and changing shipment frequency (11 percent). The parts manufacturer determined that by globally positioning inventory across multiple facilities, it could minimize the overall cost of holding inventory and better meet service levels.

■ **Benefits:**

- *Lower inventory costs*
- *Improved service levels*
- *Shorter lead time to customers*

Cross-facility safety stock strategy

The parts maker sought to improve supply chain performance by focusing on specific business areas: improve forecast accuracy, ask customers for more lead time (from 30 to 60 days) and avoid line shutdown penalties. Using Inventory Analyst, the current supply chain network was modeled and analyzed. The resulting baseline showed inventory positioned locally or facility by facility, each holding the necessary safety and cycle stock to meet production and customer service goals.

Once the baseline was completed, an optimization scenario was run using the baseline parameters and assumptions. The optimal configuration showed 80 percent of



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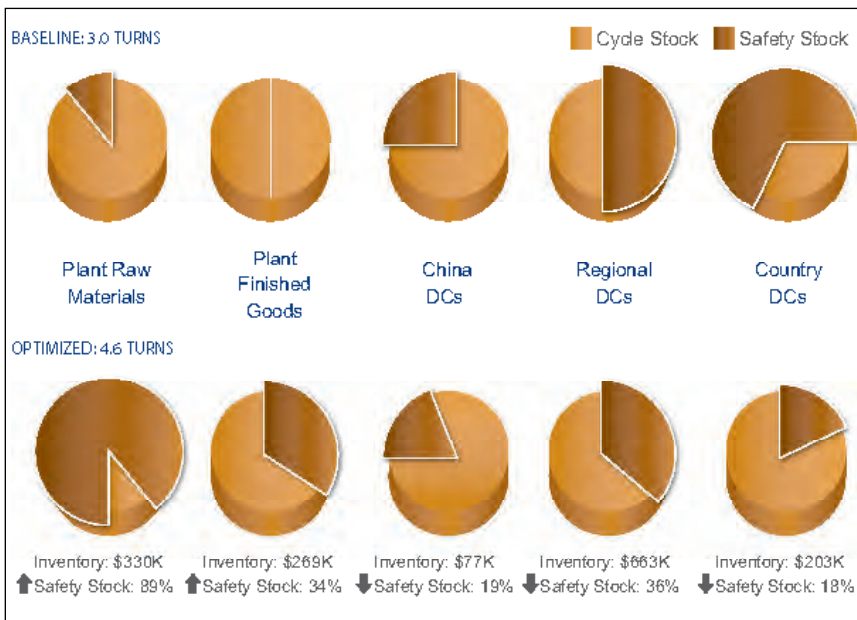
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the safety stock held at two tiers of the supply chain as follows: 89 percent in plant raw materials, 34 percent in finished goods, 19 percent in the China DCs, 36 percent in regional DCs and 18 percent in country DCs.

Benefits

Globally positioning inventory across multiple facilities allows the customer to both minimize the overall cost of holding inventory and meet service levels. This new hybrid inventory configuration enabled the company to better support both OEM and aftermarket customers, resulting in an increase from 3 to 4.6 inventory turns and allowing the company to

maintain shorter lead times to its customers. The global inventory optimization was also able to identify the hidden drivers of inventory that ran counter to management's assumptions. They showed that reducing forecast error and increasing lead times had an impact of less than 1 percent on supply chain costs.

Products and services used

Software

- IBM® ILOG Inventory Analyst



Recyclable, please recycle.

Information Management software

Bank of the West approves loans in one day with IBM ECM and BRMS solutions

Overview
Bank of the West San Francisco, California www.bankofthewest.com
Industry <ul style="list-style-type: none"> Financial Services
Products <ul style="list-style-type: none"> IBM® FileNet® P8 <ul style="list-style-type: none"> IBM FileNet Content Manager IBM FileNet Business Process Manager IBM FileNet eForms IBM WebSphere® ILOG JRules IBM WebSphere Application Server
For more information, visit: ibm.com/software/ecm

With more than 700 offices in 19 midwestern and western states, the US\$67 billion-asset Bank of the West offers a full range of business, corporate, personal, trust and international banking services.

Challenge

As Bank of the West more than doubled in size, primarily through acquisitions, manual processes made it difficult to quickly and efficiently process commercial loans. Delays arose as applications were routed through approvals via interoffice mail. If, during the credit review process, additional information was required, the documents had to be returned to the originating branch and then resubmitted. As a result, while the risk management team could typically respond to a loan application the same day it was received, approving loans could take nearly a week given the process delays.

Solution

Bank of the West implemented IBM® FileNet® eForms, IBM FileNet Content Manager, IBM FileNet Business Process Manager and IBM WebSphere® ILOG JRules business rules management system (BRMS) software to move from a manual, paper-based process to an efficient, automated paperless system. This integrated Enterprise Content Management (ECM), Business Process Management (BPM) and BRMS solution uses active content via eForms to trigger business processes and it separates business rules from the processes themselves so the company's Credit Administration team can update credit conditions, approval requirements and special approval privileges without IT assistance. The result? An increasingly agile organization that can respond quickly to customer needs and changing market requirements.

With nearly 750 loan transactions processed through the system monthly, it was important that the eForms have the same look as paper forms so employee adoption would be seamless. FileNet eForms and BPM software enable bank staff to complete loan forms online—populating borrower information from the loan accounting system into the credit request document—and then easily route the applications through credit review and approval.



“IBM software helps us reduce the time to process and approve loans from nearly one week to less than a day. This has been critical in our ability to maintain a competitive edge.”

—Michael Begovich, Senior Vice President,
Risk Management, Bank of the West

“The more we move from paper-based to paperless processes using IBM software, the more our loan officers can concentrate on our customers and strengthening those relationships.”

–Michael Begovich

This integrated ECM, BPM, BRMS system confirms each approver’s credit authority and requires certain critical data boxes to be completed before allowing the file to be saved and transmitted. Additionally, where permitted, it can identify overrides of declined credit decisions and creates the form for staff to justify and report on the override action. Upon credit approval or denial, an e-mail notification is automatically generated to advise business units of credit decisions and risk grade changes.

If credit reviewers need additional information, loan officers can immediately update the forms online and then instantly share the new document. This has helped eliminate lengthy delays due to interoffice mail and enabled staff to approve new loans the same day they are received when additional information is required. Previously this process could take up to a week when corrections and additional information were sent by interoffice mail. Additionally, the solution has helped streamline auditing and reporting processes. Risk management staff can now generate end-of-month reports of data collected by the system, including borrower industry, collateral and risk categories, for credit reviewers to evaluate. Before, each branch had to manually pull paper copies of the reports and then send them via interoffice mail to the risk management office for review.

The agile IBM ECM software has also enabled Bank of the West to automate more than a dozen processes across customer service, cash management and employee requisitions. For example, customer service representatives can enter customer inquiries directly into electronic forms which are automatically routed to the appropriate department for resolution. Approximately 5,000 Bank of the West employees use IBM ECM software today and the bank expects that number to grow as it continues to automate cumbersome paper-based processes. IBM WebSphere Application Server software provides a performance-based application foundation for building, deploying and managing a reliable, available and scalable ECM and BPM solution.

Benefits

- Reduced approval turnaround from nearly a week to less than one day
- Expected savings of about US\$1.5 million over five years
- Improved staff productivity to enable employees to focus on strengthening customer relationships



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Bharti Airtel grows at a stunning pace by keeping its focus on the customer.

Overview

■ **Business Challenge**

Bharti Airtel needed to maximize its future flexibility and growth potential by adopting a business-driven framework for integration, allowing it to implement and deliver new services rapidly. With competition intensifying in the Indian telecom services market, Bharti Airtel needed to find a way to focus on developing new services that could set it apart from the competition and strengthen its customer relationships.

■ **Solution**

Bharti Airtel entered into a comprehensive 10-year agreement with IBM to transform its processes and take on the management of its IT infrastructure. Its new platform provides a standardized framework for Bharti Airtel to integrate its channels and customer-facing processes – enabling a more seamless customer experience, higher customer satisfaction and more profitable growth.

■ **Key Benefits**

- *Ability to process 1.5 million new customers per month*
- *Outsourcing of technology enables Bharti Airtel to focus resources on growing the business*



Based in New Delhi, Bharti Airtel is India's largest private sector telecom operator, with a strong presence in mobile communications, fixed line services, and domestic and international long distance services. Bharti Airtel is India's sixth-largest company by market capitalization, with more than 57 million customers (as of 12/31/07) and US\$4.2 billion in annual revenues (as of 3/31/07).

In the global telecommunications market, it's hard to imagine a more fertile environment for explosive growth than India. With a large, young and tech-savvy population, an economy whose growth rate is second only to China and telephone penetration of just seven percent, India stands as a textbook example of how demand for communications services can be explosive if the conditions are right. A few years ago, when forecasters predicted a fourfold increase in subscribers in three years – to 200 million – it seemed impossible. Since then, however, market growth has outstripped the unlikely forecast, and no operator has been better poised to capitalize on this opportunity than Bharti Airtel (www.airtel.in).

“By working along with us to transform our go-to-market strategies and reinvent our internal processes, IBM has been a partner for the innovation that we see as essential in our ability to sustain our rapid growth.”

– Jai Menon, Group CIO,
Bharti Enterprises and Director
(IT & Innovation), Bharti Airtel

Business Benefits

- Ability to process 1.5 million new customers per month
- Improved cross-selling and targeting and a more seamless, efficient total customer experience through end-to-end integration of customer-facing processes
- Optimization of business processes and infrastructure through flexible, standardized integration framework
- Outsourcing of technology enables Bharti Airtel to focus resources on growing the business
- Flexible pricing model enables Bharti Airtel to avoid major increases in capital expenditures

Based in New Delhi, Bharti Airtel is India's largest private sector telecom operator and India's sixth-largest company by market capitalization. Bharti Airtel is also the only operator to offer its services (mobile, fixed line and Internet access) in each of India's 23 "circles," or operating areas. While this wide service footprint made Bharti Airtel especially well-positioned to capitalize on India's telecom boom, it also presented the company with significant challenges and risks in addressing this demand. In order to keep up, while also maintaining high levels of customer service, all the processes required to run its business—from order management and service activation to those processes involved in the operation of its core network—needed to run smoothly and in sync with each other. With the company approaching a new phase in its growth as a business, and with the need for a compelling user experience of utmost strategic importance, Bharti Airtel knew it needed to take a fundamentally new look at the way it created and managed its customer-facing processes.

The risks of growth

Bharti Airtel's other big challenge was the need to make the major investments in IT infrastructure required to service its rapidly growing base of subscribers. As a capital expenditure, these investments are typically offset by the future service revenues that they enable. However, in addition to the inherent risks of a large fixed investment, Bharti Airtel faced an added financial risk from a steady decline in India's average revenue per user (ARPU) for mobile telecom services, the result of government-mandated pricing changes that created—at roughly eight dollars a month—one of the lowest ARPUs of the region. Thus, while Bharti Airtel realized that it was absolutely essential to invest in its future growth, factors unique to the Indian market substantially increased the risks of making these capital investments.

To address these unique opportunities and challenges, Bharti Airtel established a far-reaching outsourcing relationship with IBM that substantially mitigates its IT investment risks by giving IBM full control and ownership of Bharti Airtel's IT infrastructure and associated processes. By substituting predictable operating expenses for risky, upfront capital investments, this strategy fundamentally transforms the financial underpinnings of its business model. An equally important aim of this strategy is to enable Bharti Airtel to focus its energies on growing, serving and retaining its customer base—and thus fully capitalize on India's astounding growth surge.

“Our new strategy is all about delivering a truly differentiated experience, and having the flexibility to continually improve the customer experience.”

— Jai Menon

Growth through flexibility

Bharti Airtel knew that the key to capitalizing on its growth opportunities was to establish deeper and more personalized relationships with its customers, as well as to provide a consistent, high-quality customer experience. It further realized that, from an IT perspective, the ability to integrate its diverse systems and processes was essential. Bharti Airtel saw the flexibility of IBM's integration approach—and recognized the application of IBM's extensive portfolio of middleware products and expertise in service-oriented architecture (SOA)—as an ideal match for its integration requirements. Dr. Jai Menon, Group CIO, Bharti Enterprises and Director (IT & Innovation), Bharti Airtel, was a key architect of the plan. "Our new strategy is all about delivering a truly differentiated experience, and having the flexibility to continually improve the customer experience," says Menon. "We knew that having a flexible framework for integrating our systems and customer-facing processes was essential to enabling this—and that IBM's strength in this area would prove to be a great fit."

Incorporating the proven IBM Service Provider Delivery Environment (SPDE, or "speedy") Integration Hub solution, IBM Global Business Services designed and implemented an Enterprise Application Integration platform that integrates a wide range of customer-facing and back office processes. Its flexibility is evident in the range of integration options it provides Bharti Airtel. In the case of customer self service, for example, each of the three main channels—Web, interactive voice response and short message service—employ different integration technologies (such as publish/subscribe via IBM WebSphere® MQ and asynchronous messaging via IBM WebSphere Business Integration Server) depending on the channel's technical needs.

In line with its vision, Bharti Airtel's advanced integration capabilities have enabled the company to transform key aspects of the customer experience; account activation is just one example. With Bharti Airtel signing up an average of 1.5 million customers per month, the ability to activate new accounts with maximum efficiency is essential. By integrating the account activation process with such key backend systems as billing, provisioning and order management, Bharti Airtel was able to cut the time required to activate new mobile accounts by 90 percent. Bharti Airtel's integration framework has also led to stronger business intelligence capabilities, which have in turn enabled the company to maximize the value of its customer relationships through cross selling and market segmentation. Menon sees these improvements as part of a broader pattern that came out of Bharti Airtel's partnership with IBM.

Key Components

Software

- IBM Service Provider Delivery Environment
- IBM WebSphere Business Integration Server
- IBM WebSphere MQ
- IBM DB2®

Servers

- IBM System p™
- IBM System x™
- IBM TotalStorage® Enterprise Storage Server®

Services

- IBM Global Business Services
- IBM Global Technology Services
- IBM Strategic Outsourcing

Why it matters

As part of its first-of-a-kind IT outsourcing agreement, IBM helped Bharti Airtel create a highly flexible platform for integrating its customer-facing processes across all lines of business. The dramatic process streamlining this system has enabled is a key reason Bharti Airtel has been able to add an astounding 1.5 million new customers per month without a hitch.

“IBM has played a pivotal role as a strategic partner in contributing to Airtel’s vision and roadmap for innovation,” explains Menon. “By working along with us to transform our go-to-market strategies and reinvent our internal processes, IBM has been a partner for the innovation that we see as essential in our ability to sustain our rapid growth.”

A key driver of Bharti Airtel’s decision to outsource its IT activities to IBM was the desire to channel its internal energies and resources into capitalizing on a spectacular market opportunity rather than on the enabling platforms needed to do so. The scorching growth of Bharti Airtel’s customer base, and the ability of its business processes to keep up with this growth, illustrates the success of this strategy. But it was also driven by the desire to maximize the efficiency of its operations by entrusting IBM with the ownership and management of its IT resources, and, in the process, making its IT costs more predictable and manageable. IBM has held up its end of the agreement by continually investing in the optimization and consolidation of Bharti Airtel’s infrastructure—key components of which include IBM System p and System x servers as well as IBM TotalStorage Enterprise Storage Servers. IBM Global Technology Services performs ongoing software maintenance and development, while IBM Strategic Outsourcing provides installation services, help desk services and the ongoing management of Bharti Airtel’s IT environment.

Two years into the agreement, Bharti Airtel’s innovation efforts have resulted in many external recognitions, a highlight of which was receiving the 2006 NASSCOM IT & Innovation Award from the Hon’ble Prime Minister of India, Dr. Manmohan Singh. Bharti Airtel’s bold strategy has also produced outstanding results at the bottom line. Even in the face of declining average revenue per customer in India, Bharti Airtel has been able to post an operating cash flow margin of 40 percent, a full five percentage points higher than the rest of the industry. Menon sees process efficiency and scalability as a big factor in its performance. “It’s our ability to bring activation from four days to two hours, and our billing cycles from 15 days to two hours,” says Menon. “It’s our ability to handle more and more customers.”

For more information

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Bombardier lays flexible portal foundation for new online services and competitive edge

Overview

■ The Challenge

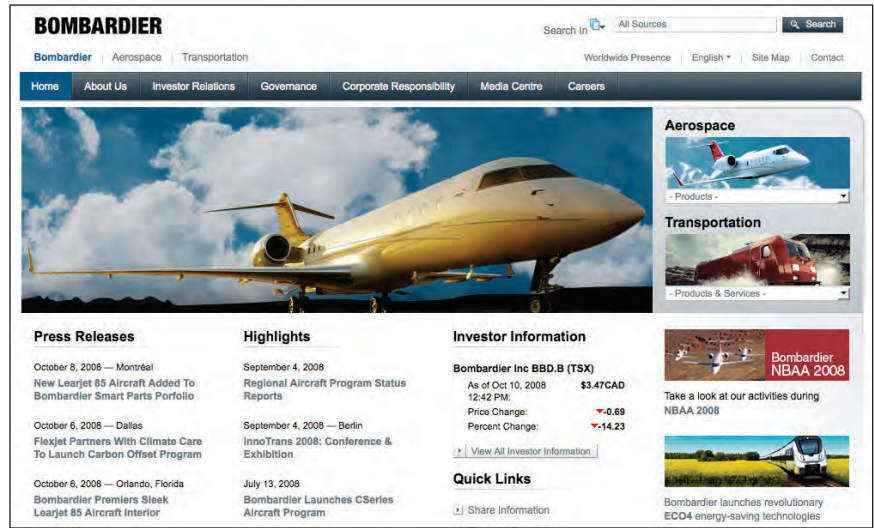
A large aerospace and transportation manufacturer needed to consolidate its Web presence, strengthen its brand and support ongoing provision of new services

■ The Solution

A strategic architecture and enterprise-wide portal solution based on IBM® WebSphere® Portal, with IBM WebSphere Portlet Factory and WebSphere Portlet Factory Designer, IBM Lotus Notes® and Lotus® Domino®, IBM OmniFind™ and IBM WebSphere Information Integrator

■ Key Benefits

- Single platform and single branded online image strengthens external perception of an integrated company
- Easy access to critical information helps increase customer satisfaction
- Replacing e-mails, phone calls and faxes with online interactions improves efficiency of business processes
- Simplified IT administration helps lower costs
- Flexible, scalable Service Oriented Architecture (SOA) and faster development of new applications and services provide competitive edge



Growth is good, but every so often it is worthwhile to stop, review where growth has taken you, and plot the path ahead. Such has been the experience of Bombardier, Inc. Founded in 1942 by the inventor of the world's first snowmobile, this Canadian company has evolved into a Fortune Global 500 conglomerate with annual revenues of US\$17.5 billion and 60,000 employees. Retaining its focus on innovative transportation solutions, Bombardier today encompasses two main divisions: Bombardier Aerospace for aircraft production and services and Bombardier Transportation for railway production and services.

“The portal allows us to be more competitive. We see what others are doing, but we think we’ve gained a competitive advantage with the infrastructure we have in place today.”

*—Sean Terriah,
Head, Solution
Architecture Group,
Bombardier Aerospace*

Key Components

Software

- IBM WebSphere Portal Enable V5 and V6
 - IBM WebSphere Portlet Factory V5
 - IBM WebSphere Portlet Factory Designer V5
 - IBM Lotus Notes 7
 - IBM Lotus Domino Enterprise Server 7
 - IBM OmniFind Enterprise Edition V8
 - IBM WebSphere Information Integrator Content Edition V8
-

As Bombardier grew through acquisitions, it deployed several enterprise portals as well as a number of Web sites and application-specific portals. But when the company examined its overall Web presence from the viewpoint of its external constituents, it realized it had a problem. Too many Web sites and applications were being delivered externally, and they were not integrated or consistent: they had different URLs, branding and navigation, and each required a different user name and password.

Bombardier wanted to strengthen its brand by presenting an image of itself as one company, but its Web presence was broadcasting the opposite. Customers noticed the disconnect as they navigated the company's multiple Web sites with different passwords and dealt with duplicate data entry requirements. They also had a hard time finding information.

Bombardier's customer ratings had fallen and were getting worse. Additionally, the effort required to develop new applications had become overwhelming because the company didn't have a way to leverage reusable assets.

Company management plans renovated Web presence to yield multiple rewards

In response to these symptoms and the company's overarching goal of building a unified brand image, Bombardier management decided to develop a strategic architecture and an enterprise-wide portal. This would bring sharper focus to its business vision and objectives, help develop more advanced integration strategies and establish a method for all future portal-related development.

With the new architecture and portal in place, the company would be able to consolidate information and services for all its constituents; provide easier access to information; increase revenues through improved communications with customers and the provision of new services; and improve efficiency through better collaboration among employees and partners. Bombardier also anticipated being able to lower its costs by offering more self-service options; reducing the effort and cycle time for developing and deploying new services and applications; and simplifying support and operation of its applications and infrastructure.

Architecture and portal strategy generates requirements

An internal strategy group was formed to define the company's enterprise architecture and portal strategy. The group recognized early on that it could not think about an enterprise portal in isolation from all the interconnected elements; instead, the group considered the entire "portal ecosystem" and looked at this from many angles to generate requirements.

In addition to portals, the group knew it wanted search and Web content management capabilities, as well as tooling to support rapid application development. Security was a major requirement, as was the ability to create composite applications. The group set a standard that every component built would have to be reusable, be mapped to a business function and reside in a repository where other developers could find it for reuse in the context of their projects—creating, in essence, a Service Oriented Architecture (SOA).

With its requirements in order and some opportunities identified for quick hits on a new portal, the group considered solutions from several top portal vendors. Bombardier already used IBM middleware and data integration technology as well as a lot of IBM hardware, IBM WebSphere Application Server and IBM Lotus Notes and Domino. The company employed an SAP portal to serve its portal content and expected to continue using it for that purpose, but it also had other applications running on different platforms. This heterogeneous infrastructure meant the company needed what it called a "horizontal portal"—a platform that it could plug other modules into and that could integrate with many different back-end systems.

Careful investigation leads to flexible portal solution

After carefully considering the portal platforms available from competing vendors, Bombardier selected IBM WebSphere Portal. With its workflow capabilities and core portal services that aggregate applications and content, this would form the standard for Bombardier's portal technology and business application integration. The company also chose IBM WebSphere Portlet Factory software to streamline portlet and Web application development for fast creation and deployment of composite applications, as well as the WebSphere Portlet Factory Designer tool, which offers

“With our investments in WebSphere Portal technology and SOA, we now have an agile delivery platform in place to support our business priorities of offering an ‘amazing customer experience’ and collaboration capabilities with our extended partners.”

*–Sean Terriah,
Head, Solution
Architecture Group,
Bombardier Aerospace*

prebuilt integration for existing applications such as Bombardier's Lotus Notes applications. These products would allow the portlets to be exposed as services in the architecture. IBM OmniFind would provide the portal search engine.

The first portal implementations are launched

Sean Terriah of Bombardier Aerospace and head of the Solution Architecture Group within Bombardier's centralized IT organization helped start up the portal project. "We overhauled the environment to get the portal ecosystem in place," he explains. "Once the foundation was laid, the objective was to engage the business leaders in discussion of opportunities for providing online services to their customers and suppliers."

A team led by Terriah held visioning workshops to learn what the various business units wanted to see on the portal. Terriah also created a roadmap showing which features would appear in successive releases, and his team embarked on creating the first release of the portal, which went live in June of 2007.

Customer portal offers customers self-service options

The first implementation was a portal for the Bombardier Aerospace Division that would provide self-service to customers—the aircraft owners. The work initially entailed migrating content and services from two of Bombardier's existing Web sites—one for regional aircraft and the other for business aircraft—onto the WebSphere Portal platform. The new portal gives customers access to technical manuals and service bulletins residing in Lotus Notes forms and documents, as well as alerts and news of upcoming events.

To create this portal, Bombardier Aerospace relied heavily on WebSphere Portlet Factory to expose the Lotus Notes documents as services. These had been written over time in various formats and many looked rough on the page. WebSphere Portlet Factory simplified the process of retrofitting this content, reformatting it and making it presentable for surfacing through the portal.

The site supports certain aspects of the engineering, manufacturing and customer support processes. Content is personalized by aircraft program and user profile so that the information displayed to the end user only pertains to his or her fleet.

For example, a customer who owns Learjet 45 aircraft wouldn't be shown content related to Challenger aircraft or to regional aircraft. Users answer a few questions at sign-on that determine the appropriate content to display.

At first, most of the content was read-only. But as the portal ecosystem stabilized, more transactional functions came online, including self-service workflow applications that enable customers to do things like order spare parts, view order status and file warranty claims. If the customer wants to file a claim, for example, he can click on the pertinent sales order and complete the filing. A Bombardier employee enters the portal to review and validate the claim, and then approve or send it through a workflow for a higher level of approval if required. The customer can see the status of his claim and any comments related to it as it moves through this process, as well as respond to comments and provide additional feedback. The entire record is written directly into SAP.

Supplier portal eases external collaboration

The second instance of the portal focused on suppliers. Suppliers can use their portal to respond to specification discrepancies found in their manufactured parts, including viewing the notification of a discrepancy and explaining how they are going to correct it. A Bombardier employee reviews and validates the supplier's response, then approves it or forwards it for higher approval. If the proposed measure is approved, the information is filed into a legacy system that handles vendor non-conformance of parts for further processing.

Portal ecosystem will support streamlined future development

Preparing the strategic architecture for these implementations and facilitating streamlined future development required substantial work. "The portal is just a component of an ecosystem of integrated components. You don't just buy the portal product, install and configure it, and then go live. You also have to connect everything around it to make it work," says Terriah.

That integration was the biggest challenge Bombardier faced with the first implementations: every service plugged into the portal had to have the same availability and reliability as the portal itself. For example, to provide 24x7 service to customers,

every moving part of the portal ecosystem had to be available 24x7. Says Terriah, “Many of the components the portal relied on had to be reshaped to make sure they could all support the same service level agreement, which took getting a lot of people on board.”

The WebSphere Portal solution helps ensure that business logic is isolated from the presentation layer to enable the reuse of business components and creation of composite applications. This helps the project team “normalize” portal components and application development standards and guidelines, as well as support component modeling and generation. The reusable components will also help minimize use of nonstandard approaches and tools, and help reduce the number of custom applications that must be built from scratch. Terriah estimates that the overall effect will be lower total cost of ownership (TCO) and time to market for deploying additional portal components.

Bombardier portals produce business benefits

The Bombardier enterprise portal has helped simplify IT administration: there is now only one portal infrastructure to manage, and it supports both customers and suppliers. There is also just one platform and one brand for the company’s Web presence, helping to strengthen the perception of Bombardier as a single integrated company. Self-service capabilities give customers fast, convenient access to critical information whenever they need it, increasing customer satisfaction and the credibility of Bombardier as a valuable business partner.

Bombardier has also experienced greater efficiency as online interactions replace faxed communications and their high incidence of error and cumbersome manual follow-up. For example, suppliers used to send faxes that a Bombardier employee would need to manually enter into a back-end system. Frequently, some of the data supplied would be wrong or illegible, necessitating further follow-ups and rework. Moving the warranty claims and validations online has radically reduced the amount of time and effort spent getting claims filed correctly, and this time savings can now be applied to higher value work.

Improved efficiency also yields cost savings. The cost of developing and deploying new services and applications has been reduced now that Bombardier Aerospace has a simple way to integrate Lotus Notes applications into the portal; knows how to index content and expose it through the search capabilities; can orchestrate interactions with SAP; and can manage single sign-on.

Furthermore, developers have a considerable stockpile of reusable assets and services to leverage in new applications rather than starting every new project from scratch. Terriah reports that the cycle time for new application development has been notably shortened, while quality, integrity and integration factors have all improved. The portal infrastructure also helped the company reduce the cost of supporting and operating its applications and infrastructure, and this return on investment is expected to continue to grow over time.

The future looks bright

With its re-architected infrastructure and portal solution, Bombardier has laid a flexible, scalable foundation for rapid creation and easy integration of new online services that will support the company's business objectives far into the future. The team's hard work has paid off: portal usage has grown to about 25,000 registered users, with 2,000 logins per day. In addition to ongoing work on the portal implementations for customers and suppliers, the company transitioned Bombardier.com to run on the same WebSphere Portal platform.

Now, the company's goal is to accelerate delivery of value to the business by creating new services supported by composite applications. Bombardier plans to deploy more self-service capabilities for customers and suppliers in the future.

Another avenue for new development concerns role-based distinctions and personalization. Currently, Bombardier Aerospace is not using the automated personalization features of WebSphere Portal, but intensive work is underway to set up identity management and role-based provisioning in the back-end systems. Examples of different roles include owners, pilots and maintenance workers, each

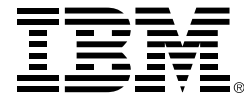
of which is looking for very specific information. With the role-specific content, users will be able to tailor what they want to see in terms of private versus public information, timeframes, portlets and RSS feeds.

Bombardier is expanding internationally and will soon need to work with overseas suppliers and partners. The new portal infrastructure will be able to handle those requirements as well, says Terriah. "With our investments in WebSphere Portal technology and SOA, we now have an agile delivery platform in place to support our business priorities of offering an 'amazing customer experience' and collaboration capabilities with our extended partners."

Summarizing the overall benefits of Bombardier's new portal solution, Terriah says, "The portal allows us to be more competitive. We see what others are doing, but we think we've gained a competitive advantage with the infrastructure we have in place today."

For more information

For more information about IBM WebSphere Portal, IBM WebSphere Portlet Factory, IBM Lotus Notes and Domino, IBM OmniFind and IBM WebSphere Information Integrator, please contact your IBM sales representative or IBM Business Partner, or visit ibm.com/software/lotus



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BP: Validating the safety benefits of real-time personnel location monitoring

Overview

■ Business Challenge

Instead of simply complying with more stringent regulations on emergency, BP sought a quantum improvement in the way it accounted for and protected its employees.

■ Solution

BP engaged IBM to develop a first-of-a-kind emergency mustering solution that translates real-time RFID data into actionable, visual information that serves as the cornerstone of new safety procedures. Flexible design enables BP to extend the solution to other key parts of its operations.

■ Key Benefits

- *Major improvement in emergency evacuation preparedness and employee safety*
- *Improved ability to support compliance with future Homeland Security directives*
- *Expected reduction in lost or stolen assets*
- *Reduction in production downtime caused by the delivery of the wrong spare parts*
- *Increased accuracy in spare parts inventory reporting*



BP is the second-largest petroleum refiner in North America.

Refineries, whose job is to transform crude oil into such final products as gasoline, lubricants and jet fuel, are the last, and arguably most important, stage in the production of petroleum related products. A dense network of pipelines, valves, gauges, storage tanks and production equipment, petroleum refineries can process as much as a quarter million barrels of oil a day over a single square mile of production facilities. This complexity—combined with the inherent volatility of petroleum products at all stages of the refining process—makes refineries one of the riskiest occupational sites.

“Our goal was to use technology to raise the bar on how we protected our employees and the public. With IBM’s help, we’ve developed a solution that is true to our commitment to safety.”

– Curt Smith, applications director for the Chief Technology Office, Information Technology & Services, BP

Business Benefits

- Major improvement in emergency evacuation preparedness and employee safety
- Compliance with state occupational safety guidelines
- Ability to support compliance with future Homeland Security directives
- Expected reduction in lost or stolen assets
- Reduction in production downtime caused by the delivery of the wrong spare parts
- Increased accuracy in spare parts inventory reporting

“When it comes to employee and public safety, we’re not trying to simply meet minimum requirements. BP is going to do whatever is necessary to make people safe.”

– Curt Smith

As such, safety is always a critical issue for petroleum refinery operators, and no one is more concerned about safety than BP (www.bp.com). There is ample evidence of how deeply ingrained safety is within BP’s culture. It’s seen in the small things, like the way BP company meetings always start with a “safety moment,” and in the ubiquitous signage promoting safe practices down to the most routine actions. More importantly, though, it’s seen in the lengths to which BP routinely goes to protect its employees and the public.

Accounting for all

One of the most important safety issues for petroleum refineries is the safe evacuation of employees in the event of a disaster, such as a fire or explosion. A key element of disaster planning is the process by which employees are located and accounted for. The accuracy of the emergency mustering process, as it is known, has a direct bearing on the actions of emergency personnel, who may put themselves at great risk in their efforts to rescue missing employees. One of the initial proposals called for the use of kiosks placed around a refinery, which would enable employees to account for themselves electronically by swiping a magnetic card. The glaring problem of this approach, however, was that it provided no certainty as to the whereabouts of a missing person, leaving open the possibility of emergency personnel launching a hazardous search operation for an employee who may have left the facility hours before.

As part of the search for a provider to develop a solution, IBM staff met with BP to propose a design that would bridge what had been technical obstacles to building a positive accounting system. The gist of the plan involved employees wearing RFID tags that would send location information at frequent intervals, with the data uploaded to a control center. Where IBM’s plan—and capabilities—stood out, however, was in the all-important handling of the vast quantities of data generated by the RFID system. In essence, BP’s system needed to not only track employee locations, but also use that data to trigger events within specific business processes. Business rules would provide this linkage. To achieve this, the solution required an advanced middleware layer with a highly flexible means of changing the underlying business rules to suit different situations and requirements. Equally important to BP’s safety managers was an advanced visualization capability to display this data. IBM integrated all these capabilities into a solution known as the Location Awareness and Safety Solution.

Passing muster in a challenging environment

For IBM, the breadth of the Location Awareness and Safety Solution ensured that its development would be a team effort. The core of the solution is IBM WebSphere® RFID Premises Server, a middleware product that provides a platform to integrate data from sensory devices (i.e., RFID tags) into business applications. For the RFID devices themselves, IBM employed the Sapphire DART Precision Asset Location System from RFID leader and IBM Business Partner Multispectral Solutions, Inc. (MSSI). One key factor in MSSI's selection was its strength in ultra-wideband RFID solutions, which provided a high degree of accuracy in highly metallic, interference-prone environments such as refineries. Another was the quality of its active ID tags, which are unique in their ability to support the high "blink rate" necessary to have a real-time view of employee location, without the rapid loss of battery power. The final major component, custom developed by IBM Research, is a real-time visualization engine that provides a rich graphical view of employee locations and associated metrics. IBM Software Group was responsible for assembling these components into a discrete solution, while IBM Global Business Services provided guidance on how the solution should integrate with BP's business processes. The system runs on a pair of IBM System x™ servers.

In the event of an emergency or disaster, the Location Awareness and Safety Solution presents a real-time, three-dimensional view of the location of employees in and around the refinery. Having this view drastically reduces the need for rescuers to conduct sweeps of a particular area in search of unaccounted for employees. The Location Awareness and Safety Solution platform itself is poised to address a far wider range of safety and security issues—due in large measure to the flexibility of the software framework. For instance, through the solution's easy-to-use interface, staff can configure the solution any number of ways to create new or temporary security zones along with conditional business rules that apply to the zones. By integrating the solution with security clearance data within its HR systems, the system can identify unauthorized personnel within a zone and automatically notify safety personnel, who can take fast corrective action to ensure the safety of the employees. BP is testing a variation of this approach to reduce accidents associated with the movement of overhead cranes, which represent one of the biggest causes of injury in the oil business. By integrating RFID position information, the crane safety initiative is designed to provide a collision avoidance warning to alert crane operators.

Key Components

Software

- IBM WebSphere RFID Premises Server
- IBM WebSphere Application Server
- IBM mySpace visualization software

Servers

- IBM System x

Services

- IBM Software Group
- IBM Global Business Services
- IBM Research

IBM Business Partner

- Multispectral Solutions, Inc.

Timeframe

- Development of Location Awareness and Safety Solution prototype: 1 month
 - General rollout: 6 months
-

Why it matters

By integrating active RFID technology with its business processes, a refinery gains a graphical, real-time view of all employees—wherever they are. Flexible business rules enable a refinery to extend the benefits of real-time RFID into such key operational areas as asset management and workplace safety.

Extending a real-time view

The other major use envisioned for the Location Awareness and Safety Solution is real-time asset tracking and management. The two biggest factors driving this are the high degree of wear and tear that oil production equipment experiences—which necessitates the extensive stockpiling of spare parts such as wellheads—and the high cost of these parts, routinely exceeding \$100,000 per item. By applying the solution to a spare parts management operation, BP would be able to track the location of each part in real time, saving potentially millions by drastically reducing the incidence of lost or stolen parts. RFID-based inventory tracking also has the potential to reduce the cost and time required to manually check inventory within BP's parts storage facilities, saving hundreds of thousands of dollars annually and ensuring that parts-in-stock records are continually up-to-date and accurate.

Curt Smith, applications director for the Chief Technology Office, Information Technology & Services, and a key driver of the project, sees the largest potential benefit of real-time parts tracking as improved accuracy and efficiency in the way BP supports its oil production operations in the Gulf of Mexico. The return on investment is driven by the cost in lost production of sending out the wrong parts to fix a problem. With high production costs and volumes, the solution's benefits build up fast. "We view the solution's real-time tracking potential as an important tool to improve our performance and substantially reduce the downtime associated with parts delivery errors," he explains.

While Smith expects the solution's benefits to extend deeply into BP's operations, he points to improved safety as the ultimate benchmark of success. "Our goal was to use technology to raise the bar on how we protected our employees and the public," says Smith. "With IBM's help, we've developed a solution that is true to our commitment to safety."

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CenterPoint Energy breaks new ground in grid reliability through the power of automation

Overview

■ Business Challenge

Like the rest of the electric transmission and distribution industry, CenterPoint Energy needs to deliver power more efficiently and reliably in the face of growing consumer expectations, environmental concerns and increasing costs. The company also saw the opportunity to break new ground in grid management practices.

■ Solution

Subject to approval by its regulators, CenterPoint Energy plans to leverage a mix of leading edge communication technologies, smart meters and first-of-a-kind process innovations to create one of the industry's first intelligent utility networks. This mix of advanced technologies, which utilizes a service-oriented architecture (SOA) foundation, will enable near real-time data access and automated processes for a new level of grid reliability, fewer outages and faster response.



CenterPoint Energy's electric operations unit delivers electricity to 2 million customers in a 5,000-square-mile area that includes Houston, the nation's fourth largest city. CenterPoint Energy (NYSE: CNP) owns and maintains 3,766 miles of transmission lines and 46,376 miles of distribution lines—enough to go around the world twice—and delivers over 76 million Megawatt hours of electricity annually.

■ Key Benefits

- *Reduction in the frequency and duration of power outages through proactive management and automated response*
- *Overall increase in meter reading and grid management efficiency*
- *Near real-time electric use data provided by smart meters to the utility and to the consumer*
- *Extended asset life for distribution and substation equipment through remote monitoring and diagnostics*

When it comes to the electricity that powers homes, schools, businesses and hospitals, most people have little more than a fuzzy idea of what's involved to get it there. This ambiguity disappears when it comes to their expectations, however. They expect the power to be there when they need it, and if it's not, they want the problem fixed as fast as possible—period. In the greater Houston area, it's the responsibility of CenterPoint Energy's (www.CenterPointEnergy.com) electric transmission and distribution business unit to meet this expectation for 2 million customers. The company

Setting the foundation for a more efficient, reliable power grid through automation

Potential Market Benefits

- Greater electric reliability—reduction in the frequency and duration of power outages through proactive management and automated response
- Potential for retail energy providers to increase new time-of-use rate structures and additional services
- Increase in customers' ability to manage their own demand for power, which may encourage greater energy conservation

owns and maintains the grid of power lines that connect electric generators to users. One of the outcomes of electric restructuring in Texas in 2002 was the creation of a new layer in the market, comprised of competitive retail electric providers that sell power and services directly to customers and, in effect, pay CenterPoint Energy (CNP) for the use of its power lines.

While a new electricity market in Texas was perhaps the most visible outcome, a changing regulatory environment—both at the state and federal level—also intensified the challenges that CNP faced as a business. Like other transmission and distribution providers around the country following the Northeast blackout in 2003 and the severe hurricane seasons in 2004 and 2005, CNP was looking for ways to “harden” the grid by making it better able to resist outages and fluctuations in power quality.

As envisioned in the U.S. Department of Energy’s “Grid 2030” plan, the goal was to bring many of the defining attributes of the information superhighway—such as resiliency and intelligence—to the nation’s electrical grid. Regulators were also encouraging changes on the demand side, most notably giving electricity consumers the means to change their consumption patterns based on near real-time usage data, transparency and time-of-day pricing—all of which will allow the consumer to be an interactive participant in the electric market. While the future vision was clear, the best way to implement it was anything but.

CenterPoint Energy’s business challenges

CNP faced a series of operational challenges. For one, material costs—driven by the growing demand for transformers, cables and conductors, as well as increases in the costs of the copper, aluminum and steel they are made of—continue to rise, along with franchising fees and taxes.

CenterPoint Energy also realized that only a fundamental change in its business and operational structure would provide a viable, long-term answer. What makes this story stand apart, however, is that CNP opted for revolution over evolution by resolving to comprehensively change the way it operates. Looking beyond short-term strategies, the company saw its challenge as an opportunity to provide much-needed leadership for an industry in flux, and saw IBM as the ideal organization to help it articulate and realize its vision of a next generation power grid.

Drawing upon expertise and technology from nearly every part of IBM, CenterPoint Energy established a roadmap for building an Intelligent Utility Network, or IUN. Traditional grid management systems provide only the most basic information on operational status and have no way to gather information from—or deliver information to—the homes and businesses they serve. As such, they enable only a limited

“We expect that the Intelligent Grid will improve electric power line grid planning, operations, and maintenance, enabling us to deliver power more efficiently. We also expect the technology to contribute to fewer and shorter outages.”

– Tom Standish, Group President,
Regulated Operations,
CenterPoint Energy

“top-down” view, with essentially no rapid view from the “bottom up.” Today, field crews must be on site to identify the location and cause of power outages. In the future, technology will pinpoint the outage location. The core premise of IUN is that by improving the transparency of the entire grid—to the meter and beyond—energy delivery companies like CenterPoint Energy will have a more granular, real-time view of conditions on the grid. This will vastly improve the ability to leverage information, make the grid more reliable and operations more efficient.

While the broad goals embodied by IUN are not new, their realization has been held back by technological barriers, the most fundamental being the lack of a viable communications infrastructure that spans the distance from a utility’s backend systems to its customers’ meters. While utilities may be able to detect a problem using their current systems, they are often unable to ascertain the nature of the problem until crews arrive on-site. It is because of this gap that utilities like CenterPoint Energy are forced to rely on physical visits by field staff to diagnose and fix problems, as well as to activate/deactivate service and read meters.

The solution

Designed in collaboration with IBM, CenterPoint Energy’s proposed IUN solution will address these issues through the innovative application of leading-edge technologies—including broadband over power line (BPL)—and its work with IBM Research to develop first-of-the-kind failure detection capabilities that go beyond what was previously thought possible. The fact that BPL, which sends a broadband signal over distribution wires (utilizing solutions from IBM Business Partners Corinex and Artech), leverages CNP’s existing assets is just one benefit. The bigger story is how the company’s future BPL infrastructure, when deployed by IBM Global Technology Services, will provide a single conduit for a wide range of grid-related activities, with advanced meter services, the use of the meter as a sensor on the grid (with its own address), and the deployment of home area network monitoring and control representing prime examples.

Using meters from IBM Business Partner Itron that have two-way communications capability, CNP has successfully tested automated meter reading as well as more advanced capabilities such as remote connection and disconnection of service, both of which promise to reduce the incidence of costly “truck rolls” to the customer’s premises. Meter data management software from IBM Business Partner eMeter (running on IBM BladeCenter® servers and managed by IBM Global Services Strategic Outsourcing) will control the flow of meter data to and from CNP’s backend systems. The fact that these meters have the built-in capability to wirelessly send and receive data with everything from individual appliances to thermostats within customers’ homes and businesses opens up a range of new service opportunities down the road.

Solution Components

Software

- IBM WebSphere® Message Broker

Servers

- IBM BladeCenter

Services

- IBM Global Business Services
- IBM Global Services Strategic Outsourcing
- IBM Global Technology Services
- IBM Research

IBM Business Partners

- Itron, Inc., eMeter, Corinex, Artech
-

“While we see this initiative as helping to transform us as a company, many of the results and innovations that come out of it will help to transform the energy transmission and distribution industry as a whole.”

– Don Cortez, Division VP, Operations Technology, CenterPoint Energy

Smarter power

As part of its pioneering deployment of an intelligent utility network, CenterPoint Energy will be putting in place an SOA framework that will better enable a wave of innovations, including a first-of-a-kind outage detection capability that features self-healing within the grid and fully automated dispatching.



One of the key insights in the project was that simply having a communication infrastructure wasn't enough when it came to supporting its future service requirements. Instead, CenterPoint Energy needed an architecture with the inherent flexibility to support a growing number of services and thus fully leverage its communication backbone. To that end, IBM Global Business Services will be designing a service-oriented architecture (SOA)-based service delivery framework that employs IBM WebSphere Message Broker as an enterprise service bus to enable different services to share grid data in real time. Using this framework as a foundation, the IBM-CNP team will be able to redesign and automate many of the core processes used to manage the grid. The most revolutionary improvement will be in the area of fault detection. Using data gathered from first-of-a-kind analytical techniques developed by IBM Global Business Services and IBM Research, CNP will be able to not only detect problems, but also to diagnose faults and their precise location so it can send the right crew with the right equipment to fix the problem.

Complementing this quantum increase in grid transparency are process automation efforts designed to drastically cut the duration of outages and to mitigate their effects on customers. Automation will not only let the company operate more efficiently, but will also provide the basis for a self-healing capability within the grid. The proposed solution, when approved by the company's regulators, will detect outages the moment they happen—enabling the system to reroute grid traffic around the problem automatically to minimize its impact.

As a storm-prone city situated on the Gulf Coast—and the home to a large base of energy-hungry businesses—Houston is the ideal testing ground for one of the world's first true IUN solutions. Don Cortez, Division VP, Operations Technology, and a driving force behind the IUN project, sees CenterPoint Energy's work with IBM as strengthening the foundations of its business and providing leadership for other transmission and distribution service providers around the world. "We're working to implement all those things that people dream about in a newly deregulated energy market—all very new ideas," says Cortez. "With its unparalleled track record in translating technology innovation to sustainable market success, we saw IBM as the right kind of partner to help us succeed."

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Cheshire County Council brings its social service agencies together to deliver person-centric care

Overview

■ **Business Challenge**

Driven by growing resource constraints and a government mandate, Cheshire County Council sought to coordinate the way its various agencies served its growing senior population. Manual, unconnected processes within its agencies stood in the way.

■ **Solution**

Cheshire County Council built a new needs assessment solution that enabled its agencies to function as a single, “virtual” community of providers—and served as the nucleus of a process automation effort that has drastically improved the efficiency and quality of senior care.

■ **Key Benefits**

- 20 percent reduction in time and cost required to perform in-home senior visits
- Improved ability to proactively manage the course of health and social care for senior citizens
- Reduced administrative costs through improved coordination between healthcare providers and social agencies



Cheshire County Council, in the UK, was one of the first local authorities to address the government's requirement of a uniform, standardized way to assess the healthcare and social services needs of its senior citizens, known as the Single Assessment Process. The solution it created now has a thousand users and is expected to add thousands more in the coming months.

Within any given community, the social service agencies that serve it have two very important things in common—first, that they promote citizens' best interests through their services, and second, that they rely on public funds to achieve it. But by and large, that's where the commonality ends. Like the needs of the citizens they serve, public agencies—whether it's home health services or the fire department, to name a few—are a highly diverse and specialised lot. It is seen in the unique mission that drives each of them, down to the mix of resources, expertise and practices they bring to bear in their day-to-day activities. Not surprisingly, the notion of specialisation has become deeply embedded in both the culture of

“We're not only helping Cheshire to be at the leading edge in the way it provides services to its older citizens. With IBM's help and insight, we've also developed a whole new model of how local government can provide services to citizens in an innovative and joined-up way.”

- Alan Allman, Senior Manager for Business Strategy, Planning and Performance, Cheshire County Council

Business Benefits

- 20 percent reduction in time and cost required to perform in-home senior visits
- Improved quality and continuity of care by gaining a single seamless view of a citizen's case history
- Improved ability to proactively manage the course of health and social care for senior citizens
- Lessened burden for senior citizens to fill gaps in provider or agency records
- Improved utilisation of health and social care resources
- Reduced administrative costs through improved coordination between healthcare providers and social agencies

“We needed a provider that could offer us access to broad and deep resources and expertise. IBM’s edge was that it had this while at the same time giving us the focus, flexibility and attention you would normally only get from a smaller provider.”

– Alan Allman

social service agencies and in what citizens have come to expect in dealing with them. Put simply, the requirement that local social services be delivered and received through a series of parallel—but unconnected—channels has long been seen as a fact of life.

However, important changes in the social services landscape are causing governments to reassess the need to change their practices. One of the most basic drivers is resource availability, with demand for social services growing as a result of demographic changes and government funding struggling to keep up. In the realm of health and human services, an equally important factor is a growing awareness of the need for continuity to maximise the quality of care that aged, infirm or vulnerable citizens receive. When agencies deliver services to a given citizen independently of one another, there’s no way to get a comprehensive picture of that citizen’s care history. This at best deprives caregivers of the information they need to provide a seamless, coordinated course of care going forward, and at worst makes elderly patients vulnerable to not receiving the follow-up care they need.

Leading the way

Calling for a better way to handle case management for senior citizens, national government laid the groundwork by providing a general framework for local authorities to streamline the way they collect, manage and communicate case information between agencies—a set of activities known collectively as Single Assessment Process. Cheshire (www.cheshire.gov.uk), a county of just under a million residents located in North West England, has emerged as an early leader implementing the Single Assessment Process. Working with IBM and IBM Business Partner Esprit Ltd., Cheshire County Council developed and implemented a collaborative case management platform and an accompanying set of process improvements that have proven to be highly successful. The following is an example of how achieving this success required fresh thinking along a number of dimensions, not least of which was the practical challenge of making a solution flexible enough to accommodate the needs of multiple agencies.

Cheshire County Council’s “before” state typified the shortcomings of disconnected social service delivery channels. Each time an agency worker visited a senior citizen at his or her home, the worker was required to fill out his agency’s paper-based assessment form in full—from demographic information to that citizen’s specific health or mobility needs. That paper form was then stored in a file folder within the agency. If, for any reason, another agency working in Cheshire visited the home—say the fire brigade or emergency medical services—the same process would unfold. In pinpointing the disadvantages of this process, wasted time and effort for both the citizen and the agency employees were only the most obvious. More insidious and costly were the lost opportunities to use existing information to deliver

services more intelligently and effectively. Achieving such an ideal state would require all of the County Council's departments and collaborating agencies to function as a single virtual entity, capable of viewing all aspects of a particular citizen's requirements in its totality, and responding to the citizen in a coordinated, integrated fashion.

Enabling process change

Cheshire County Council realised that as long as senior citizen case assessment information remained compartmentalised within each agency, its vision of coordinated service delivery would be impossible to achieve. It also realised that while having the technological capacity for sharing this data was essential, changes at the business process level—enabled by technology—would play a bigger role in making the council's vision a reality. The solution designed by IBM and Esprit directly embodied this view. Its foundation is Esprit's ShareCare for e-Enabled Single Assessment Process platform, which combines tight security, flexible device access and advanced forms technology to enable agency workers to create, access and change assessments remotely. The solution runs on IBM WebSphere® Application Server and employs IBM Tivoli® Access Manager for end user authentication.

Leveraging the system's powerful workflow capabilities, Cheshire County Council worked closely with IBM and Esprit to design a whole new set of standardised assessment processes that are employed by all agencies using the system. Automation is a strong point—not only for efficiency's sake—but because it facilitates the kind of seamless, cross-agency coverage that prevents individuals from “falling through the cracks” because of undetected needs. When agency employees make their initial visit, they populate a standardised electronic form, which (if the citizen gives approval to share the data) becomes the core of that citizen's profile. On each subsequent visit, from any agency, employees can retrieve and modify that profile as necessary, instead of having to rebuild it from scratch. The automation comes in on the backend. Based on changes in the profile—such as a recent medical procedure or change in mobility status—the solution automatically flags a citizen as potentially needing one or more additional social services and sends a notification to the appropriate agency for follow-up. Built-in confirmation tools ensure that all agencies and providers fulfill their respective roles.

Among the biggest barriers to small government projects even getting off the ground are the issues of funding and accountability; Cheshire County Council's single assessment process initiative was no exception. IBM was instrumental in resolving this issue by proposing that the solution be deployed as a shared service, hosted and managed by IBM e-business Hosting Services and paid for based on usage levels. The advantages are many. First and foremost, hosting the service

Solution Components

Software

- IBM WebSphere Application Server
- IBM Tivoli Access Manager
- Esprit ShareCare for e-Enabled Single Assessment Process

Servers

- IBM System x™

Services

- IBM Global Technology Services e-business Hosting™ Services

Business Partner(s)

- Esprit Ltd.

Timeframe

- Deployment: 8 Months
 - End-User Training: Ongoing
-

Transformation at a glance

To better coordinate the activities of its social service agencies, Cheshire County Council created a single shared service delivery platform that enabled its agencies to form a virtual community of providers. This, in turn, enabled the council to create a series of standardized and automated processes that not only lowered costs but also tightened the social safety net for the council's senior citizens.



means that each of the council's agencies can focus on its mission instead of worrying about the technology. Moreover, since it is based on usage, hosting also provides an inherently flexible framework for resolving and managing budget issues across different agencies.

Built for growth

Then there's scalability. As new agencies are brought on board, the solution's modular architecture (built on IBM System x servers running in IBM's Warwick data center) enables low-cost, incremental capacity growth as needed. With the solution having grown to a thousand users in the year plus since it went live—and thousands of new users expected to come on board in the next several months—the benefits of scalable growth have already become apparent. So, indeed, has the inherent flexibility of the shared services model. Based on the success of the Cheshire County Council solution, the counties of Devon and Cornwall—located in South West England—are deploying their own solutions using the same scalable IBM infrastructure.

Cheshire County Council expects the solution to ultimately save an estimated 20 percent in the time and cost of delivering in-home social services to seniors. The planned introduction of a self-service solution—which will enable service users to create and maintain their own assessment profiles online—will enable the county to stretch its social service resources even further. With its population of seniors growing, Cheshire, and any other county using the system, is able to provide the most efficient and high quality care to them. Perhaps the strongest vote of confidence in the solution came from England's National Health Service (NHS), which selected it and three others from a large pool of applicants to connect to the NHS Spine, a key part of the NHS's nationwide Care Records Service initiative. Alan Allman, Senior Manager for Business Strategy, Planning and Performance, expects the solution to add momentum and provide direction to similar efforts nationwide. "We're not only helping Cheshire to be at the leading edge in the way it provides services to older citizens," says Allman. "With IBM's help and insight, we've also developed a whole new model of how local government can provide services to citizens in an innovative and joined-up way."

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ODC03085-USEN-00

Cobra enhances decision making with SOA platform from IBM and Sowre

Overview

■ Challenge

Integrate disparate IT systems and communications to support collaboration among employees around the globe

■ Solution

Build a service-oriented architecture (SOA) that combines business applications, consolidates data and centralizes access for on demand accurate and reusable information enterprisewide

■ Benefits

Drove 60% reduction in archiving and retrieving activities; enables well-informed collaborative decision making with connected enterprise; reduces print consumable and document shipping costs



Founded in 1975, Cobra Automotive Technologies SpA. (Cobra AT), based in Varese, Italy, is a leading international group in the field of security solutions for the automotive industry. Cobra offers a unique integration of location-based services and electronic systems for the prevention and the management of risks associated to vehicles such as theft, hi-jack, frauds and low speed maneuvers. Antitheft components and devices, parking aid systems, stolen vehicle recovery services, fleet management, smart insurances

services and wireless communications combine to offer the motorist a comprehensive portfolio of products and services. The organization's principal clients include major car and motorbike manufacturers, and a network of close to forty distributors worldwide.

Through a recent expansion and acquisition program, Cobra AT now boasts direct operations in China, France, Germany, Japan, Italy, Spain, Switzerland and the United Kingdom, as well as a network of local distributors across Europe and Asia.

“Building an SOA architecture could be a very challenging task but the competence, vision and the skills of a partner like Sowre, joined with the stability of IBM middleware products convinced us to believe that a better infrastructure is a possible and reachable goal.”

– *Eugenio Mariotto,
Chief Information Officer,
Cobra AT*

Becoming “data service” oriented

A crucial component arising from Cobra AT’s geographical expansion was the need to integrate the company’s disparate IT systems and communications in order to allow the free flow of data and collaboration among employees around the globe, making the “ONE COBRA” environment idea real. Only then could the true benefits and economies of scale be realized, giving Cobra AT greater competitive advantage in the global market.

Cobra AT recognized the need to build a true service-oriented architecture (SOA) across its company, a network that can combine all its business applications, consolidate all data and centralize access, offering on demand accurate and reusable information enterprisewide. In short, it sought to become a “data service” oriented company.

After evaluation Cobra AT selected IBM Premier Business Partner Sowre, a company that had the experience and vision to undertake a project of this size and complexity, to provide the solution.

“Building an SOA architecture could be a very challenging task but the competence, vision and the skills of a partner like Sowre, joined with the stability of IBM middleware products convinced us to believe that a better infrastructure is a possible and reachable goal,” says Eugenio Mariotto, chief information officer, Cobra AT.

Archiving and retrieving document activities down 60 percent

Sowre faced the challenge of unifying all data sources, and implementing a cost-effective SOA-type platform, making fully collaborative on demand information available at all Cobra AT locations. Key goals included:

- *Increasing the sharing of information*
- *Consolidating data server*
- *Providing access to real-time data via the Web*
- *Supporting faster decision making capability*
- *Reducing document shipping and printing costs*
- *Decentralizing the creation/update of contents on corporate portal*
- *Increasing data transmission speed*
- *Reducing information duplication and mail server size*

Sowre chose its CM/R&B (Content Manager/Retrieve and Barcode) solution, based on the IBM® Content Manager Enterprise Edition 8.4. IBM Content Manager provides a single, open foundation to create, manage and distribute all forms of content, across multiple platforms and business solutions. IBM CommonStore for Lotus® Domino® manages e-mail archiving and retrieval for any IBM Lotus Notes® database or server platform. IBM Lotus Sametime® Connect 7.5 integrates external users for real-time collaboration. IBM InfoSphere™ DataStage® simplifies the implementation of data transformation using ETL technology (extract, transform and load). IBM Lotus Quickr® is team collaboration software that helps users share content, collaborate and work quicker. IBM WebSphere® Portal delivers exceptional Web experiences with personalized user applications.

Sowre's implementation of its solution and IBM products had a profound effect on the speed and accuracy of decision making throughout the Cobra AT organization. Relevant real-time data is available immediately, replacing numerous aged hard-copy paper reports. Time-consuming business travel and meetings have given way to swift, well-informed and agreed business strategies utilizing collaborative company intelligence via secure online, instant messaging and VoIP (Voice Over Internet Protocol) technology.

A seamless implementation

Integration between Cobra AT's IBM System i®-based custom ERP application with IBM Content Manager was quickly and seamlessly achieved using Sowre's CM/R&B data entry and traceability solution. Once stored in this common content repository, Sowre confirmed that applications and data were available to both internal and external staff using collaborative solutions Lotus Sametime and Lotus Quickr. This comprehensive solution fully integrated with the incumbent Portal and IBM Tivoli® architectures and respected the SOA vision that Cobra AT desired.

A suite of benefits

Cobra AT is implementing a universal and scalable solution that matches its SOA vision and global infrastructure:

- *Archiving and retrieving savings: Three days per week per person*
- *Connected enterprise-wide for well-informed collaborative decision making*
- *Secure and rapid transmission and retrieval of content from centralized repository*

Solution Components

Software

- IBM® CommonStore for Lotus® Domino®
- IBM Content Manager Enterprise Edition 8.4
- IBM InfoSphere™ DataStage®
- IBM Lotus Domino
- IBM Lotus Notes®
- IBM Lotus Sametime® Connect 7.5
- IBM Lotus Quickr®
- IBM WebSphere® Portal

IBM Business Partner

- Sowre CM/R&B (Content Manager/Retrieve and Barcode)

“Cobra’s vision was to create a common and shared platform to integrate most of the environment resident in the company. IBM products and our solution CM/R&B helped us to integrate everything. If you have the right tools, any task, even the most complex, is easier to accomplish. We massively reduced integration time and code writing activities.”

– *Andrea Airaghi,
IM Technical Director,
Sowre*

Cobra AT also enjoys many cost benefits:

- *Documents and structured data availability directly from application*
- *Print consumables cost reduced*
- *Document shipping minimized*
- *External worker connection and authorization costs avoided*

Becoming international

Cobra AT knows it takes more than geographical locations to become an international organization. The power of an IBM Content Management solution, and the experience, vision and care of Sowre, has empowered Cobra AT to operate as a global entity. Backed with accurate, on demand, enterprisewide data, Cobra AT is equipped to serve its expanding market effectively, and build its customer base.

“Cobra’s vision was to create a common and shared platform to integrate most of the environment resident in the company,” says Andrea Airaghi, IM technical director, Sowre. “IBM products and our solution CM/R&B helped us to integrate everything. If you have the right tools, any task, even the most complex, is easier to accomplish. We massively reduced integration time and code writing activities.”

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Computer Parts Maker Optimized Distribution Strategy

Overview

■ **Objective:**

One of the world's largest manufacturers of disk drives and magnetic disks, and a leader in storage area network (SAN) solutions, launched a CEO-driven, company-wide initiative to streamline its supply chain operations and increase its profitability. The company manufactured products in Asia and used an intermediate network of distributor facilities to serve customers in the United States. The company realized that this layer of distributors resulted in very low visibility and a long cash-flow cycle.

■ **Solution:**

In a pilot project focused on the distribution of disk drives in North America, the company collaborated with LogicTools (now IBM ILOG) to understand the cost benefits of working more closely with its distributors and explore the option of shipping directly to customers. Using IBM® ILOG LogicNet Plus XE to analyze its options, the customer identified U.S. \$4 million in annual savings and reduced the



length of the cash-flow cycle by 50 percent. This was achieved by eliminating the distributor layer in the supply chain and moving to a direct shipping model to serve customers. As a result of increased supply chain visibility, overall inventory was reduced and production was able to react more quickly to changes in market conditions and customer needs.

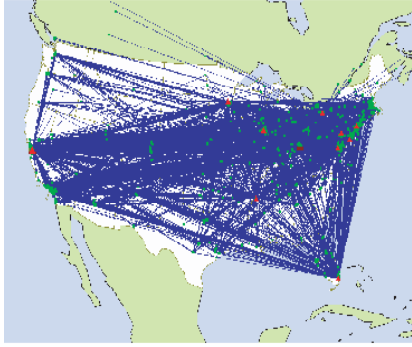
■ **Benefits:**

- Improved service levels
- Shortened cash-flow cycle by 50 percent
- Reduced inventory levels

Reduce distribution and inventory costs

The customer manufactured products in Asia and shipped them to its distribution centers (DCs) with a transportation lead time of four weeks. Products were then distributed through a network of distributor DCs. Each distributor had its own network of DCs from which products were shipped to customers. Inventory was consigned and most of the shipments were small and sent through less than truckload and UPS Air. The customer paid a flat handling charge to its DCs and also paid for the out-bound transportation costs. All customers were promised a two-day delivery window once an order was placed.

BASELINE

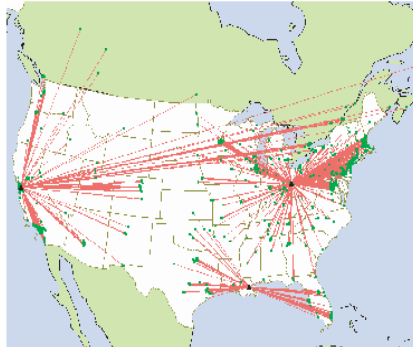


Graph shows optimized distribution from DCs

The primary objective of the distributors was to avoid stock-outs, and since the inventory was consigned, they did not have an incentive to reduce inventories. The customer did not have visibility into the distributors' networks and had to rely on the orders placed by the distributors in planning production. The customer realized that it could reduce distribution and inventory costs by working closely with its distributors. The customer wanted to go to each distributor to ensure the disk drives were shipped from the best locations possible. Alternately, the customer would ship the products directly while the distributors maintained the interface with the customers and some of the cost savings could be shared with the distributors. The customer wanted to determine the best distribution network to achieve the above objectives. A secondary goal was to determine the best assignment of customers to DCs.

The customer used LogicTools' distribution planning solution to first capture the current network configuration and then the optimal distribu-

OPTIMAL



tion network to reduce costs with and without the distributor layer of DCs. Inbound and outbound transportation costs, warehousing costs and service constraints formed some of the key inputs. IBM ILOG LogicNet Plus XE helped the customer determine the best number and locations of DCs to serve its customers at minimal cost.

Benefits

Based on extensive analysis of the results from the IBM ILOG LogicNet Plus XE model, the customer was able to save millions of dollars annually in distribution costs, as well as significantly reduce inventory. This gave the customer more visibility into the downstream supply chain, thereby increasing manufacturing flexibility and further reducing raw material inventories. In addition, the length of the cash-flow cycle was reduced by 50 percent through direct shipping to customers.

Products and services used

Software

IBM® ILOG LogicNet Plus XE



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An IT college in Brazil educates students with a collaborative social network built on IBM technologies.

Overview
Faculdade de Informática e Administração Paulista São Paulo, Brazil www.fiap.com.br
Industry <ul style="list-style-type: none"> • Education
Products and services <ul style="list-style-type: none"> • IBM BladeCenter® • IBM WebSphere® • IBM Tivoli® • IBM DB2® • IBM Lotus®



“With the help of the e-learning platform, our students will enter the job market with a better understanding of how collaborative technologies and communities are used in the real world.”

—Celso Poderoso, director, International Education,
Faculdade de Informática e Administração Paulista

Faculdade de Informática e Administração Paulista (FIAP) is a college located in São Paulo, Brazil, focused on training the next generation of IT workers. More than 3,000 students attend the school.

Challenge

FIAP tries to mirror the technologies and practices of the modern job marketplace for the benefit of its students. Because workforces both in and out of IT are increasingly asked to work outside of traditional office environments, FIAP needed to adopt collaborative technologies to address the reality of this new job marketplace.

Solution

FIAP engaged IBM to implement a new e-learning platform that students can use to effectively collaborate with one another and their teachers. Using the new technology, users can create blogs and virtual communities as well as organize online activities.

The college adopted a single IBM BladeCenter® S chassis with BladeCenter blade servers, running the Linux® Red Hat and Microsoft® Windows® operating systems, to host the new platform. FIAP chose IBM WebSphere® Application Server software to manage its new collaboration solution. The college then implemented IBM Lotus® Connections software as the primary collaboration system among the students and the teachers. To store its valuable data, FIAP implemented the robust IBM DB2® for Linux, UNIX® and Windows data server. And it deployed IBM Tivoli® Directory Integrator software to synchronize the data between Microsoft Active Directory's Lightweight Directory Active Protocol and the DB2 data server.

Benefits

- Simulated real job marketplace experience for remote workers
- Allowed students to collaborate with one another and their teachers
- Enhanced control and security-rich access to information, applications and assets



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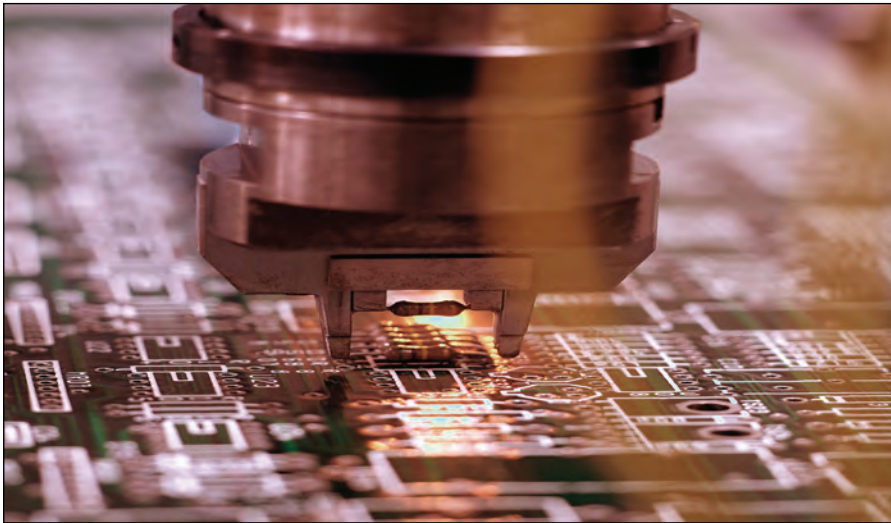
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Financial engineering form for supply chain industry

Supply risk and flexibility management



Overview

A privately held company based in California, provides software to optimize supply-chain risk and flexibility to Global 2000 manufacturing companies worldwide.

■ **Business need:**

The software company needed a sourcing strategy that could help minimize total sourcing costs while ensuring flexibility for opportunistic sourcing situations.

■ **Solution:**

IBM® ILOG OPL Development Studio was used to prototype the problem into a model and test it with realistic data. Development Studio shortened the time to market for the company's Supply Risk and Flexibility Management (SRFM) solution and allowed developers to experiment with different approaches to the optimization problem. The project involved 10 to 15 people and took place over two and a half years. SRFM is run on a J2EE™ platform in a Windows® 2000 server farm.

■ **Benefits:**

- *Average savings of 6-12 percent*
- *What-if scenario analysis*

Founded in 2000 by experts who pioneered the application of financial engineering techniques to the supply chain, this company enables its customers to rigorously quantify the costs and risks associated with their supply-chain relationships, and design and execute new relationships that optimize supply-chain performance.

Challenge

Sourcing strategies cost manufacturers millions of dollars, cutting into the companies' revenues as deeply as 50 to 70 percent. Manufacturers need a solution that helps minimize total sourcing costs while ensuring flexibility for opportunistic sourcing situations. The solution must address availability and liabilities, including inventory levels, penalties and write-offs, as well as objectives specific to companies—all while optimizing primary sourcing costs that typically include shipping, storage and packing materials.

Failure to strategically manage sourcing can be extremely costly. Weakening demand and inflexible supply agreements have resulted in inventory write-offs worth millions of dollars.

Solution

The company's SRFM solution analyzes structured agreements, enabling customers to assemble the best possible cost, risk and flexibility package when negotiating an order contract with a supplier. The Vivecon solution arms the manufacturer with a portfolio of contract structures covering a variety of conditions. This range of best possible packages contains cost-neutral solutions aimed at producing a win-win agreement between the manufacturer and the supplier. SRFM uses IBM ILOG CPLEX to determine optimal contract structures based on the manufacturer's sourcing objectives, and works with a problem model built with Development Studio. According to the company, CPLEX is helping SRFM users achieve average sourcing savings of 6 to 12 percent.

Cutting costs through contract negotiations

The company's solution an analytical system that produces a range of possible agreements under various scenarios. It uses a four-stage approach:

- The system applies stochastic processes to determine a range of demand based on historical data.
- It identifies possible contract structures for addressing the demand.
- The user selects the best possible contract structure from a menu that SRFM assembles based on business objectives.
- It finishes by identifying optimal purchase orders that fit the selected contract structure.

CPLEX is used in the fourth stage, performing the calculations that show the likely results of different contract conditions.

“Because our product is an optimal solution, it requires robust analytics to run it. IBM ILOG CPLEX is the power behind the application, doing all the number crunching.”

*-- Vice President of Marketing,
Software company*

Products and services used

Software

- IBM® ILOG CPLEX
- IBM® ILOG OPL Development Studio

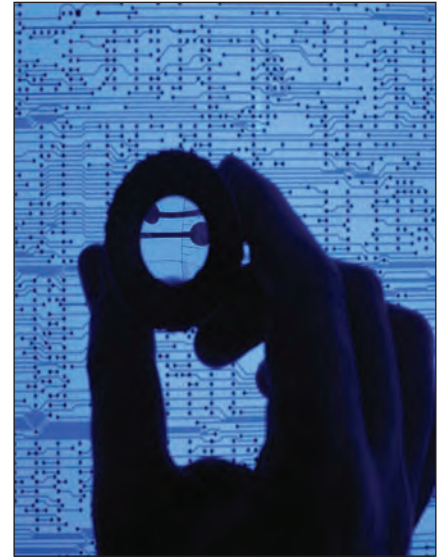
Benefits

The users of the solution achieve average cost savings of 6 to 12 percent.

Users experience other benefits as well:

- Accurate projections of costs and risks associated with different supply agreements under various business scenarios
- Quantified impacts of sourcing tradeoffs
- Reports, models and what-if scenario analysis to support negotiations
- Portfolio monitoring and optimal contract utilization through purchase recommendations

The solution provides greater control of sourcing during uncertain times, continuity in inventory needs, and the flexibility for varying demand conditions.



It produces huge savings—as high as 8 to 15 percent for one of this company's customers—and helps ensure that both manufacturer and supplier come out winners.



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WSC14148-USEN-00

The Finnish Defense Forces are winning the battle for closer cooperation between service branches

Overview

■ **Business Challenge**

Like many militaries, the Finnish Defense Forces (FDF) faces the challenge of managing and adapting to increasingly dynamic and complex situations with limited resources. The FDF realized that closer coordination between its own service branches and with those of other nations was essential, but deeply entrenched silos in its command, control, communications and computing (C4) systems presented a major barrier.

■ **Solution**

The FDF teamed with IBM to create an SOA-based service hub that enables all branches to share common C4 applications and—by enabling the dynamic reuse of services—allows the FDF to get new applications out to the field in a fraction of the time.

■ **Key Benefits**

— *Projected 80 percent reduction in time required to develop new C4 systems via SOA service reuse*



The 17,000 employees of the Finnish Defense Forces (FDF) are responsible for territorial surveillance, safeguarding territorial integrity and defending national sovereignty in all situations. Comprised of the Finnish Army, Navy and Air Force, the FDF has taken part in peacekeeping operations since 1956, with recent missions including Bosnia-Herzegovina, Kosovo and Afghanistan.

- *Projected 75 percent reduction in required infrastructure through consolidation and virtualization*
- *Tighter coordination and information sharing between FDF service branches*
- *Improved ability to coordinate operations with other militaries, nongovernmental organizations and other theater players*

Beginning just after World War II and lasting some 40 years, the Cold War was the single most important factor shaping the mission, structure and practices of Western military institutions in the postwar period. Though the world was far from peaceful during this time, the bipolar nature of the Cold War produced a climate of relative stability—however uneasy. Moreover, the fact that geopolitical and military actions were generally viewed through the prism of Cold War politics also produced a certain degree of clarity as to intentions, ramifications and, where necessary,

Flexible integration enables a new level of military coordination

Business Benefits

- Projected 80 percent reduction in time required to develop new command, control, communications and computing (C4) systems via SOA service reuse
- Projected 75 percent reduction in required C4 systems infrastructure through consolidation and virtualization
- Tighter coordination and information sharing between FDF service branches
- Improved ability to coordinate operations with other militaries, nongovernmental organizations and other theater players
- Improved overall decision-making and increased FDF force effectiveness

“Most of our current C4 systems are stove-piped systems to support Army, Navy or Air Force operations. We cannot afford to develop future systems on top of old systems by patching and bridging gaps and trying to maintain old technology.”

– Major General Markku Koli,
Chief of Operations, Finnish
Defense Forces

required solutions. Western nations adapted to this environment by creating security structures like NATO that provides a framework through which they can coordinate their intelligence and military resources for the common good.

Different world, new challenges

The fact that NATO has outlasted the Cold War—and has also grown in membership—provides a strong validation for the idea of collective security and military collaboration. However, the major conflicts of the post-Cold War era also reveal how much has changed in the global security landscape. In contrast to the clarity and stability of the Cold War, the military experiences of Somalia, Yugoslavia, Kosovo and Afghanistan are a chronicle of ambiguity and changeability. Multinational forces in such settings often face not only unfamiliar and unforgiving terrain, but also the increasingly difficult challenge of discerning friend from foe. The smaller scale and increased mobility of combatants only heightens this challenge.

Participating nations are in universal agreement on the need to adapt their traditional operational practices and procedures to the ambiguous and dynamic nature of today’s military engagements by making them faster, more flexible and information-driven. The biggest barrier to this transformation is the long-standing tendency to compartmentalize processes and information within military service branches, such as the Army, Navy and Air Force, a practice that not only compromises a nation’s ability to align its own military resources toward a common mission, but also makes operational coordination with the armed forces of other nations next to impossible.

The Finnish Defense Forces (FDF), an active member of the NATO Partnership for Peace since 1994 and a provider of peacekeeping forces to the Afghanistan and Kosovo missions, was one of the first to address the problem head-on. The FDF realized that its vision of a faster, more flexible and more coordinated force required not only institutional change but also a fundamental change in the way it managed information. Having participated in a NATO working group tasked with laying the groundwork for this vision, the FDF adopted the group’s resolution—to rely on SOA technology—as a guideline for its own transformation effort. The FDF found that IBM had the best mix of SOA-enabling technology, deep technical resources, and business process expertise it required to get the job done.

Like its coalition allies, each of the FDF’s service branches rely on its own separate cluster of command, control, communications and computing (C4) systems. The problem wasn’t with the systems themselves—which were tried and true—but with the technology that governed how they were accessed and integrated. The fact that the FDF’s C4 systems were built as stovepipe systems to serve specific branches of the military made them inherently inflexible and thus harder to reconfigure and repurpose in response to changing situations. The FDF’s vision was to make its C4 systems more flexible and adaptable by essentially disaggregating

them, and thus breaking down the service-specific framework that has traditionally kept them apart. This would then enable the FDF to abstract specific C4 applications into service components that could be rapidly reassembled and reused to address the specific needs of a campaign or operation. Most importantly, these reconstituted services could be accessed by all branches under a scheme known as network-centric operations, whose aim is to increase the agility, efficiency and information consistency of the systems supporting troops in the field.

A new command and control model

This vision is being realized in a 10-year program known as Finnish Network-Enabled Defense (FINED), scheduled to be completed in 2010. As designed by IBM Global Business Services, the solution uses IBM WebSphere® Enterprise Service Bus to assemble various C4 application components to develop specific operational capabilities. One early example is the development of a “common operational picture,” which will provide a single view of all information relevant to a particular operational area, including the position of troops, the location of equipment and the status of bridges and roads. Using the new SOA framework, the Navy and Air Force branches of the FDF will be able to leverage the common operational picture developed by the Army, thus reducing system overlap and ensuring that all branches of the FDF are operating with the same information. To ensure security, common access for all services is enabled via IBM WebSphere Portal, with role-based access governed by IBM Tivoli® Identity Manager and Access Manager, respectively. The FDF employs IBM Rational® as its application development environment.

One of the biggest promises of the new environment is that it will help the FDF adapt its operations quickly in response to situational changes. The key enabler is the reusability of service components, which will make possible the rapid prototyping, testing and ultimate deployment of operational capabilities—a sharp contrast to the 10-year application development cycle typical of traditional C4 architectures. With agility also important on the hardware front, IBM designed an infrastructure flexible enough to address both high-volume backend processing requirements as well as more specialized—and often mobile—processing tasks closer to the theater of operations. To address the tactical reality that network connections are not always possible in the field, IBM designed the solution in a way that guarantees availability, while at the same time supporting replication and off-line use. The infrastructure, comprised of a mix of IBM System p and IBM BladeCenter servers running Linux®, was deployed by IBM Global Technology Services and is supported by IBM Strategic Outsourcing Services. Over the span of the project, the FDF also expects the efficiency and flexibility of SOA to translate into higher hardware efficiency by enabling virtualization and consolidation as the different branches of the FDF share more and more of their C4 applications.

Key Components

Software

- IBM WebSphere Enterprise Service Bus
- IBM WebSphere Portal
- IBM WebSphere Application Server
- IBM Tivoli Identity Manager
- IBM Tivoli Access Manager
- IBM Rational development software

Servers

- IBM System p™
- IBM BladeCenter®

Services

- IBM Global Business Services
- IBM Global Technology Services
- IBM Strategic Outsourcing Services

Timeframe

- Initial system design – 6 months
 - First phase of development – 12 months
 - Extended deployment – In progress
-

Why it matters

By introducing revolutionary changes in the way its service branches share operational information, the Finnish Defense Forces (FDF) are better able to adapt to the increasing dynamism and uncertainty of modern military engagements. The SOA framework developed by IBM also helps the FDF to bind its operations more closely with other nations' forces and—by enabling service reuse and rapid development—enables the FDF to adapt its operations quickly in response to situational changes on the ground.



Good coordination

While intra-service coordination is a key goal of the FDF's FINED initiative, it is also a prerequisite to the broader goal of working with external parties (such as EU, NATO and nongovernmental organizations in the case of military or peacekeeping operations) as well as other Finnish agencies (such as police, fire and hospital services in the case of natural disasters and the like). Because the FDF is consistent with the SOA framework laid out by NATO, it will be far better positioned to share information with other military forces in international engagements. The fact that it can control information access levels provides the security capabilities it needs to work in collaboration with the armed forces of other nations.

With the groundwork laid for improved coordination among its service branches, the FDF has already been able to transform some of its most important core processes. Leveraging the new SOA platform, IBM Global Business Services is helping the FDF optimize the processes through which the Army, Navy and Air Force concentrate their resources jointly within military engagements, a process known as joint operational fires. To further build on the success of the project and to concentrate future innovation efforts, IBM and the FDF also set up a European Network-Centric Operations Centre of Excellence in Helsinki which includes a software lab, test environment, and capabilities for live demonstrations. FDF Chief Architect Mika Hyytiainen sees the Centre as an expression of IBM's commitment to continue to develop its expertise in network-centric operations as well as to the FDF's success. "The solution we've developed with IBM gives us the flexibility and resource efficiency our military needs to adapt to a more dynamic and uncertain world," says Hyytiainen.

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First National Bank of Omaha puts the spotlight on service innovation in its “branch of the future.”

Overview

■ Business Challenge

First National Bank of Omaha wanted to create a new kind of branch that would raise the bar on customer engagement and satisfaction—and maintain its 150-year track record as a service innovator.

■ Solution

First National worked with IBM to design and implement a “branch of the future” that orchestrates a range of new technologies to create a seamless self-service experience that strengthens the bank’s brand while enhancing customer satisfaction.

■ Key Benefits

- Improved customer satisfaction and stronger customer relationships through a more engaging banking experience
- Customer growth at 30 percent over target
- Improved ability to provide the latest information on new products and services, thus improving cross-selling opportunities
- Expected deeper penetration among younger, technologically savvy banking customers



First National Bank is a subsidiary of First National of Nebraska, Inc., the largest private banking company in the United States with \$20 billion in managed assets and over 7,500 employee associates located in 35 states. First National recently launched a “branch of the future” at its Shadow Lake branch, in Omaha, Nebraska.

In the realm of retail banking, the branch—once under the threat of becoming marginalized by ATMs and online banking—is undergoing a renaissance of sorts. There’s been an evolution in the way banks think about the role of branches within their overall strategy. Underpinning this evolution, and in some ways driving it, is a richer and more nuanced understanding among banks of what their customers are looking for in an overall banking experience. Along the way, retail banks have also come to realize that all of their channels play specific, yet equally important roles in delivering this experience. The importance of a balanced

“Working with IBM has enabled us to enhance human interaction to create the ultimate customer experience. Essentially, we’ve merged the convenience of a full-service, community bank with the latest technology to redefine what the branch experience can be.”

– Rolland Johannsen, SVP of Retail, First National Bank of Omaha

Optimizing the branch bank experience through personalized interaction

Business Benefits

- Improved customer satisfaction and stronger customer relationships through a more engaging banking experience
- Customer growth at 30 percent over target
- Strengthened brand through digital in-branch signage
- Improved ability to provide the latest information on new products and services, thus improving cross-selling opportunities
- Stronger appeal to younger, technologically savvy banking customers
- Reinforces the bank's image as a service innovator

and complementary channel strategy is behind the growing importance of multi-channel banking—whose goal is to align these channels to deliver a consistent, engaging and satisfying experience—as a source of competitive differentiation.

Elevating the retail banking experience

The retail bank branch is a critical part of this mix. For one, it's almost always the channel through which a bank first establishes a relationship with its customer and—over the life of the relationship—it represents the main point of physical contact the customer has with the bank. For this reason, a customer's experience using the branch can have a strong and indelible impact on the customer's perception of the bank. Under the "experience" umbrella, the range and quality of available services is a key element of the mix, as is courteous, informed and personalized service from branch staff. Just as important, however, is the physical backdrop against which the customer experience unfolds. Whether it's lighting and openness, unique applications of technology, or ancillary non-bank services, the physical dimension of the branch environment sends a powerful signal of the bank's commitment to providing a standout customer experience.

First National Bank of Omaha (www.firstnational.com), which recently celebrated its 150th anniversary, was determined to send just such a message to its customers. A subsidiary of First National of Nebraska, Inc., (the largest privately-owned banking company in the U.S.), First National Bank of Omaha planned to use its newest branch, in Shadow Lake Towne Center, to showcase its vision of the branch of the future. While convenient amenities and interior design were part of this vision, its dominant theme was to use innovative technology to pervasively transform the experience of customers using its branches, with Shadow Lake serving as a prototype of the model.

With the specifics yet to be defined, the First National team examined a number of options around in-branch self-service technology. What had proved most compelling was a first-of-a-kind display technology—called IBM Everywhere Branch Optimization—that the team had been shown at the IBM Industry Solutions Labs in Hawthorne, New York. Recently developed by IBM Research, Everywhere Branch Optimization uses a projector, advanced optics and "actionable" camera to project the image of a display on any two-dimensional surface that, when touched, can be used to trigger actions without the wiring typically associated with traditional terminal-based touch screen displays.



First National's "branch of the future" enables customers to access their safe deposit boxes using the latest in iris scan technology.

Intrigued by the possibilities of using Everywhere Branch Optimization to provide access to in-branch services, First National engaged IBM Global Business Services to lay out the possibilities and to help the bank further define how the technology would fit in with its branch of the future vision. With that foundation established, IBM refocused its mission on defining the overall architecture of the solution

and—most importantly—how it would all fit together to create a seamless, innovative experience for First National's customers. In addition to securing the appropriate internal resources, including staff from IBM's National Kiosk Practice, IBM also needed to coordinate with the third-party vendors that would be providing other elements of the solution, from kiosk software to the digital content that would be displayed alongside the solution. The team recognized that in every aspect of the project—from industrial design to technical implementation, and all points in between—the need for harmonization was paramount. To ensure this outcome, IBM Global Business Services took ownership of the project, coordinating with the other vendors involved in the branch of the future initiative to make all parts of the solution work together holistically.

A new level of customer engagement

The best way to describe how this was achieved is to take a virtual walk through the branch solution that came out of the project. When customers walk in First National's Shadow Lake branch, it isn't just the extraordinary openness of the space that first strikes them. It's also the prominently displayed trio of plasma welcome screens that present First National's latest products, services and marketing messages, which in the process reinforce the bank's brand identity. Among the other dynamic content shown on the screens is personal information on the key bank staff positioned in front of them, which helps to build a personalized relationship between the bank and its customers.

But what truly stands out from the Shadow Lake branch experience—and represents the most innovative application of technology—is the first-of-a-kind self-service solution that defines a whole new level of customer engagement. Designed with IBM Everywhere Branch Optimization at its core, the branch's "virtual koi pond" presents customers with a compelling, interactive gateway to information and self-directed branch services. At the literal center of the service is a menu of options projected as buttons onto the floor from above in the form of a circular koi pond (fish and all). Around it are four interchangeable kiosks. To choose an option, a customer steps on a button within the koi pond, such as "products and services" or "open an account." Using a specially developed pan/tilt video camera, Everywhere Branch Optimization then remotely detects which projected button the customer stands on, and based on that, sends a command to the software underlying the system. This triggers the system to direct the customer to one of the four kiosks by following a school of virtual fish within the koi pond. On the kiosk itself, the menu presented on the screen is automatically customized based on the customer's previous selection.

One of the kiosks' most advanced features is the ability to walk the customer through the entire account creation process, including the production of an ATM/debit card that customers get on the spot—without the usual wait. Branch

Solution Components

Solution

- IBM Everywhere Branch Optimization

Services

- IBM Industry Solutions Labs (Hawthorne, New York)
- IBM Research
- IBM Global Business Services

Timeframe

- Preliminary discussion of concept: 2 months
 - Development of Solution: 3 months
-

Smarter Banking

Using new sensing technology developed by IBM Research, First National Bank of Omaha built a first-of-a-kind customer self-service solution that sets a new standard for providing an engaging retail banking experience. It represents the centerpiece of the bank's "branch of the future" vision.



customers wishing to access their safe deposit box can use another technology-enabled self-service feature that departs from the usual. In contrast to the traditional practice of escorting customers into and inside a secure viewing area with two keys, First National's branch of the future employs state-of-the-art iris scan technology to perform instantaneous, touchless authentication, which is not only secure, but also liberating. The fact that 80 percent of customers have signed up for this feature speaks to its appeal.

Bringing resources to bear

What made the project a success—and what led First National Bank to select IBM—was not only the quality of research it generated in its labs, but also having the depth of resources needed to bring these ideas into the real world and make them work. This included the ability to work with technology partners in a traditional integrator role. But it also meant marshaling the expertise needed to overcome more esoteric issues, from choosing the appropriate way of printing out cards at the kiosks to choosing the flooring material that would provide the best contrast for the projected “koi pond” display. To address some of these issues, IBM Global Business Services looked to other, comparable deployments for the appropriate solution; in other cases, the deep base of technical know-how within IBM's research facilities provided the necessary input.

In the coming months, First National's branch of the future will increasingly become a branch of the present when it begins to broaden the deployment of its new solutions to new and existing branches. By using design and technology to redefine the customer experience, Rolland Johannsen, SVP of Retail, expects First National to not only further strengthen its customer relationships, but also appeal to the younger banking customers with whom the future branch system is most likely to resonate. “Working with IBM has enabled us to enhance human interaction to create the ultimate customer experience,” says Johannsen. “Essentially, we've merged the convenience of a full-service, community bank with the latest technology to redefine what the branch experience can be.”

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ODC03109-USEN-00

Food supplier Post-merger network rationalization



Overview

■ Objective:

With the acquisition of a new business unit from a competitor, one of the largest manufacturers of premium grocery products, canned food and soups faced the daunting task of merging two complex networks and planning for the warehouse requirements of the combined network. The company sources product from dozens of plants all over the world and ships finished goods to domestic customers through 20 mixing centers or ships some products directly to customers. Due to limited plant buffer capacity, product is

pushed out to the mixing centers. Production and demand are highly seasonal and geographically specific. The main objective was to combine the two networks in a cost-effective manner and analyze the impact of product seasonality on warehousing requirements. Various inputs, such as production plans, transportation costs, warehousing costs and capacities, were considered.

■ Solution:

Using IBM® ILOG LogicNet Plus XE, the customer was able to identify significant cost savings and

improve customer service levels. The food supplier leveraged expertise from LogicTools, now IBM ILOG, to determine the best combined distribution network and then analyze warehouse capacity requirements based on product seasonality.

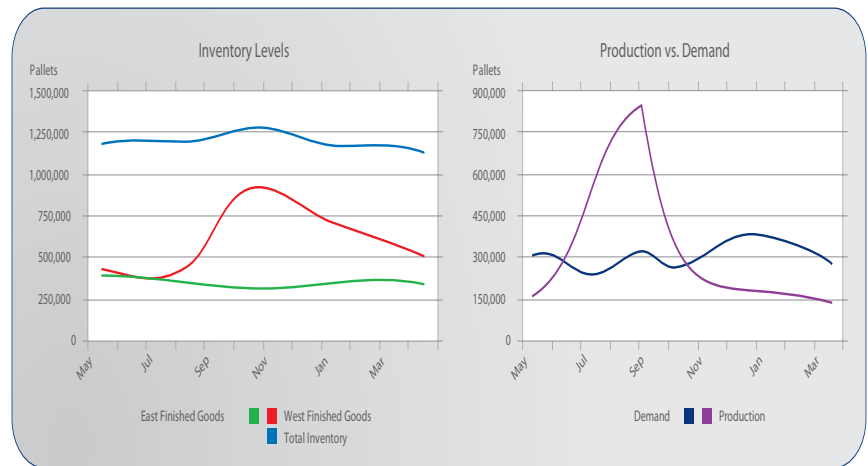
■ Benefits:

- *Optimally combine distribution networks*
- *Cut transport costs*
- *Shorten average distance to customers*

Improve service by merging supply networks

The acquired business had a very seasonal availability of key raw materials for production: only three months per year. In the combined network, the customer manufactured and shipped product out of its 40 plants to the 20 domestic mixing centers to be shipped to customers. A combination of rail and trucks was used to replenish the mixing centers. Some of the finished goods were shipped directly from plants to customers. Products were packed and shipped to customers primarily using full truck loads. Both production (due to raw material availability) and demand were highly seasonal. Subsequently, the peak-season warehousing requirements were much higher compared to off-season.

The food supplier's main objective was to reduce costs and improve service by combining the two networks. The company wanted to achieve this by determining the best number, location and capacity requirements of mixing centers in the merged network. It was a major challenge to rationalize two complex networks where seasonality changed with different regions of the country. Other challenges included increasing truck utilization, working with customers to increase direct shipments, and quantifying the opportunity for each of these options. In addition, customers demanded



Graph illustrates seasonality of customer's network

a single source of shipping for all their orders. The customer leveraged LogicTools' QuickStart methodology to first rationalize the network and then quantify various opportunities for synergy between the two merged networks. Due to the complexity of the combined network, the analysis spanned a wide variety of what-if scenarios. More than 100 optimization scenarios were run in identifying the best solution. The optimal network solution was then input into the master planning solution to help analyze the impact of demand seasonality on warehousing requirements.

The customer worked closely with LogicTools to build and then validate the baseline model. Month-by-month production capacity and demand variability were two important additional data inputs. Various what-if scenarios were then evaluated to quantify the impact on storage requirements by location.

“The customer leveraged LogicTools’ QuickStart methodology to first rationalize the network and then quantify various opportunities for synergy between the two merged networks. Due to the complexity of the combined network, the analysis spanned a wide variety of what-if scenarios. More than 100 optimization scenarios were run in identifying the best solution.”

Products and services used

Software

- IBM® ILOG LogicNet Plus XE
-

Benefits

Using IBM ILOG LogicNet Plus XE, a network design and planning solution, the food supplier was able to determine the best post-merger network for gaining significant cost savings and improved service levels:

- The number of mixing centers was reduced from 20 to nine
- Transportation costs were reduced by U.S.\$8 million
- Average distance to customer was cut by 10 percent while increasing truck capacity utilization

The customer was also able to determine the warehouse capacity requirements at every location during regular and peak seasons. Additionally, changing the coverage policies for finished goods reduced space requirements in the new network.



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German Sport University Cologne accelerates research through improved data control with DB2 pureXML

Overview
German Sport University Cologne Cologne, Germany www.dshs-koeln.de
Industry <ul style="list-style-type: none"> Education
IBM Products <ul style="list-style-type: none"> IBM DB2® 9 with pureXML™ IBM Lotus® Forms IBM WebSphere® Application Server IBM WebSphere Portal Extend IBM Rational® Software Architect IBM Tivoli® Storage Manager IBM Tivoli Directory Server IBM System Storage™ DS4300 IBM TotalStorage® 3583 Ultrium Scalable Tape Library
IBM Services <ul style="list-style-type: none"> IBM Information Management Technical Sales IBM Software Services IBM Lotus Technical Support
IBM Business Partner <ul style="list-style-type: none"> Cedros GmbH
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Das Deutsche Forschungszentrum für Leistungssport (the German Research Center for Competitive Sports) is a research facility attached to the Deutsche Sporthochschule Köln (the German Sport University Cologne)—the only sports medicine university in Germany. The organization conducts a variety of research programs to develop training regimens and specialized diets for athletes. It also offers consulting and education services for the university.

Challenge

The research organization lacked the means to properly aggregate and analyze the medical and diagnostic information generated by its research efforts. Staff pulled data from a number of sources (e.g., exercise equipment, athlete testing, research systems), manually entering this information into spreadsheets. This process wasted time, slowed researchers' efforts and led to frequent transcription errors and data loss. Staff struggled to find patterns in research data and to determine the actual results of experiments. Moreover, the research center relied on fax transmissions to share its research data, making it difficult to collaborate with outside organizations and taking up to one full day gather the necessary materials. The research center began looking for an alternate research management platform.

Solution

The research center chose to work with IBM Software Services and IBM Premier Business Partner Cedros GmbH to implement eAkte, a research management solution based on IBM software. The solution provides an online research repository that enables the organization to effectively control research data from creation to analysis. The solution captures information from the source system and subsequently transmits it to an online repository, eliminating the need for transcription. The repository offers a number of complex query and analysis capabilities that enable users to more easily identify data patterns, and the data can be accessed by internal staff and external agencies.

“Our new research portal allows us to control our data from end-to-end throughout the research process and to cooperate with outside researchers, improving the quality and value of our work.”

– German Sport University Cologne

The solution leverages IBM Lotus Forms software to create extensible markup language (XML)-based forms that contain the research data in a standardized structure. These forms are stored in an IBM DB2 9 data server, taking advantage of the pureXML feature of DB2. The Web portal used to access the repository was built with IBM WebSphere Portal Extend and IBM WebSphere Application Server software using IBM Rational Software Architect application development tools. For the WebSphere piece of the environment, IBM Software Services for WebSphere provided the center with training and technical enablement services.

Research data is backed up to an IBM TotalStorage 3583 Ultrium Scalable Tape Library using IBM Tivoli Storage Manager software—the university's standard data backup platform. The data is then stored on an IBM System Storage DS4300 device. The center uses IBM Tivoli Access Manager for e-business software to safeguard Web access and IBM Tivoli Directory Server software for Lightweight Directory Access Protocol (LDAP) support.

The online research repository is being used to help prepare German Olympic athletes by optimizing training procedures while protecting them from long-term damage due to training strain. The solution cuts access times for outside organizations from up to one full day down to seconds. It enables the research organization to more quickly identify patterns in research data, leading to faster breakthroughs, and it reduces data errors by pulling information directly from systems and equipment. Moreover, the new solution increases the productivity of research staff.

Benefits

- Cuts access times for outside agencies from up to a full day to seconds
- Enables faster identification of patterns in data, leading to faster research breakthroughs
- Eliminates transcription errors by pulling data directly from the source



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GXS automates forms-based business processes with IBM Lotus forms capabilities

Overview
GXS Gaithersburg, Maryland, USA www.gxs.com
Industry <ul style="list-style-type: none"> Computer Services
Employees <ul style="list-style-type: none"> 2,000
Products <ul style="list-style-type: none"> IBM® Lotus® Forms IBM WebSphere® Application Server



GXS is one of the world's largest providers of business-to-business (B2B) solutions. Its Trading Grid integration services platform enables real-time flow of information between businesses.

“Lotus Forms helps us improve customer satisfaction and increase our competitiveness with a highly integrated solution built on open standards and Web 2.0 capabilities.”

—Tom Varghese, Senior Global Product Manager, GXS

Challenge

GXS Trading Grid is a global B2B e-commerce and integration platform that supports the creation and adoption of on-demand supply chain management solutions for companies of any size. With a broad menu of electronic commerce services for businesses worldwide, GXS sought to increase the functionality of its current forms-based solution to provide new capabilities. The company's customers needed a solution that could render forms that looked like their paper equivalent, perform complex table look-ups and support double-byte character languages such as Japanese and Chinese. The solution had to be cost-effective, efficient and user-friendly with easy-to-use forms and Web 2.0 capabilities that enabled large businesses to trade electronically with their small suppliers and customers.

Solution

GXS deployed IBM Lotus Forms software (including both Lotus Forms Viewer and Lotus Forms Server products) as a key component for GXS Intelligent Web Forms, a Web forms solution that enables small businesses to conduct B2B e-commerce with larger trading partners. IBM WebSphere Application Server provides background support for the Lotus Forms application. GXS uses Lotus Forms software as the front-end interface, while it uses the Lotus Forms Webform Server solution to bring Web 2.0-based forms to the Internet with minimal footprint.

As an example, GXS Intelligent Web Forms was deployed for a prominent U.S. clothing manufacturer with 3,000 small business customers. Through on-demand online document exchange, the manufacturer now can rely on the application to streamline receipt of invoices and advance ship notices for customers. By making it easier for manufacturers' customers to access and receive data via the Web, GXS Intelligent Web Forms, powered by Lotus Forms, helps the manufacturer increase efficiencies within these core business processes, lower operational costs and boost overall competitiveness.

Benefits

- Lotus Forms provides the user-friendly front end that drives automation of forms-based business processes between global partners
- Pre-populated forms increase the speed and accuracy of forms completion; wizard-based forms with built-in template capabilities save users data entry time, minimize data entry errors and accelerate electronic transactions
- GXS enterprise customers can now automate business transactions with small trading partners (customers and suppliers) around the world



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LOC14021-USEN-00



Medizinische Hochschule Hannover deploys an RFID patient-tracking system that improves care and reduces wait times.

Overview
Medizinische Hochschule Hannover Hannover, Germany http://www.mh-hannover.de
Industry
<ul style="list-style-type: none"> Healthcare
Products
<ul style="list-style-type: none"> IBM Global Business Services Global Business Services – Application Integration Services Global Technology Services – Integrated Technology Services Sensors & Actuators – RFID

Founded in 1965, Medizinische Hochschule Hannover (MHH), or Hannover Medical School, is one of the world’s leading university medical centers. The school’s world-class research and patient care help set national and international standards.

Challenge

MHH wanted to optimize its patient treatment process by prioritizing and tracking patients from admission to discharge, based on medical priority and treatment. Typically, patients were entered into the hospital information system (HIS) as soon as they arrived at the facility, but after that, the IT support ended. There was no system in place that could track admissions by medical priority or track patients as they moved through the hospital system.

Solution

MHH engaged IBM to create a comprehensive patient and asset tracking solution. A team from IBM Global Business Services designed and implemented the solution architecture using a service-oriented architecture (SOA) approach. The solution uses radio frequency identification (RFID) technology to automatically track and record the position of each patient or device. The solution is adaptable and scalable, enabling the hospital to deploy other tracking solutions for medical devices and assets without investing in new hardware or system architecture to support such solutions.

Benefits

- Provides high scalability and adaptability through the SOA environment
- Improves overall patient care by helping doctors locate and prioritize patients
- Reduces patient wait times, increases patient security and cuts costs by improving medical asset tracking capabilities



“The tracking solution, built using state-of-the-art technologies like RFID, along with an open source approach, provides the medical school with an inexpensive entry-level tracking solution that we can build on for the future.”

—Timo Stübiger, doctor and project manager,
Medizinische Hochschule Hannover



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Hess Corporation maximizes its profitability with real-time pricing updates thanks to an SOA built using IBM software.

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Products <ul style="list-style-type: none"> IBM Lotus Expeditor IBM WebSphere Process Server
IBM Business Partner <ul style="list-style-type: none"> Openstream Inc.



“With the Openstream and IBM solution, it is so much easier to track inventory across our 870 stores. It streamlines our inventory processes while providing us with the peace of mind of knowing that the data is actually correct.”

—Hess Corporation

Hess Corporation engages in the exploration, production and refinement of crude oil and natural gas. Operating more than 1,350 retail gas stations in 14 eastern U.S. states, the organization also offers energy-related utilities services to commercial and retail customers.

Challenge

Locked in stiff competition, Hess Corporation’s retail gas station business relied on smooth supply chain operation to minimize costs and maintain high profit margins. But the organization’s manual product pricing and inventory processes frustrated these goals by consuming employee resources and leaving the organization open to errors. Even worse, these manual processes led to delays that frequently resulted in data that was out of date before it had been entered into the company’s database. Hess Corporation needed a new inventory solution that would automate processes and keep data up to date.

Solution

IBM delivered an IBM Retail Integration Framework solution (built using IBM Lotus® Expeditor software) that leverages a service-oriented architecture (SOA) to provide Hess Corporation with real-time insight into the inventory levels of its retail gas stations. Using personal digital assistants (PDAs) and software from IBM Business Partner Openstream Inc., the client’s staff can scan station inventory and upload that data to a local database. This information is then distributed to the client’s headquarters using Lotus Expeditor and IBM WebSphere® Process Server software via the SOA. The solution also enables Hess Corporation to update pricing information across its entire enterprise at one time, removing manual steps.

Benefits

- Maximizes profitability by supporting real-time price change updates
- Reduces inventory-tracking errors and duplicate orders by eliminating manual processes
- Streamlines order and inventory processes with an SOA, improving employee productivity



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Honda Italia Industriale teams with IBM to jump-start a significant business transformation project by adopting RFID technology for its production processes.

Overview
Honda Italia Industriale S.p.A. Atessa, Italy www.hondaitalia.com
Industry <ul style="list-style-type: none"> Automotive
Employees <ul style="list-style-type: none"> 800
Products <ul style="list-style-type: none"> IBM Global Business Services IBM Global Technology Services IBM WebSphere Application Server – Network Deployment, Version 6



“Implementing RFID technology is a fundamental step in our ‘Outstanding Quality’ production strategy. Thanks to IBM Global Business Services and the IBM WebSphere platform, we have a superior foundation on which to build our RFID solution.”

—Nicola Marrone, Project Executive,
Honda Italia Industriale S.p.A.

Selling motorcycles, scooters and off-road bikes, Honda Italia Industriale S.p.A. (Honda Italia) is the world leader for powered two-wheel (PTW) vehicles. In 2006, Honda Motor Company’s Italian subsidiary sold more than 12.7 million PTW vehicles, earning 785 million.

Challenge

To achieve greater efficiency and accuracy in its production lines, Honda Italia wanted to integrate a radio frequency identification (RFID) tracking solution into its Atessa, Italy, production plant. The PTW manufacturer wanted to quickly implement best-of-breed RFID technology, so it sought to engage knowledgeable RFID experts.

Solution

Honda Italia turned to trusted advisor IBM to provide leadership for the RFID initiative. IBM Global Business Services and Global Technology Services support the client in the design and development of the RFID project, which will enable the manufacturer to identify and track each vehicle along the production chain in real time. Additionally, the RFID tags will allow the client to track critical vehicle components, such as engines.

The IBM group collaborated with Honda Italia engineers to design new processes and to identify the best RFID solutions. The IBM team will integrate the selected technology with the client’s existing IT systems through an open-standards-based application built on the IBM WebSphere® Application Server – Network Deployment, Version 6 platform.

The first phase of the project transformed the client’s motorcycle assembly line, enabling Honda Italia to use RFID tags to monitor the traceability of critical components, manage work-in-progress and replenish inventory. Next, the client will apply the RFID technology to its scooter production line.

Benefits

- Facilitates a significant business transformation that provides real value to Honda Italia
- Improves inventory supply and quality control
- Increases the efficiency of assembly line and configuration management processes.



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Industrial Parts Manufacturer Global Sourcing Solution

Overview

■ Objective:

A global manufacturer of components for industrial machines and heavy equipment, lubricants and specially engineered products wanted to develop a consistent, fact-based and structured methodology for making product sourcing decisions. Although prior attempts had been made at rationalizing sourcing decisions, they had not been systematic nor had their results properly validated. Inputs such as freight, duties, manufacturing costs, capacities and setup times varied greatly between products and locations, making the decision process for product sourcing extremely complex. The objective was to determine which components should be made on each production line while minimizing costs and maximizing capacity utilization.

■ Solution:

The customer selected IBM® ILOG LogicNet Plus XE, the network design and planning solution from LogicTools (now IBM ILOG), to determine the optimal product sourcing strategy. The company



worked with LogicTools to build global and plant and line level models to ensure that lines were efficiently loaded, and that components were made with the greatest efficiency on any given line. Using IBM ILOG LogicNet Plus XE, the customer was able to realize a net cost reduction of U.S.\$3.2 million, and based on this success, decided to implement the initiative throughout the company.

■ Benefits:

- *Developed consistent sourcing methodology*
- *Improved production planning*
- *Reduced transport and inventory costs*

Production line assignment

The customer makes and ships machine components out of five plants worldwide. Each plant has several production lines with two primary manufacturing processes. The output of the manufacturing network is constrained by available hours and the number of lines at each facility.

One of the key objectives for the customer was to determine which production line should make a given stock keeping unit (SKU) and which manufacturing process should be used. The production speed and flexibility of SKUs made in a given week depended upon the type of manufacturing process.



Production costs and setup times and costs also varied with the different manufacturing processes. The customer also wanted to establish a centralized global sourcing process for ongoing decision making. Finally, the company wanted to analyze the above objectives under a variety of production and transportation assumptions.

The manufacturer utilized IBM ILOG LogicNet Plus XE to first capture the current configuration of the manufacturing network and then determine the optimal SKU assignment to production lines in order to minimize overall costs. The company worked closely with the LogicTools team in building a global sourcing model to support decisions on where and which parts could most efficiently be made. Production costs and capacities, lane-by-lane transportation costs, manufacturing run rates, tooling capabilities, warehousing capacities, impact of type of production, and duties for international shipments formed some

of the key inputs to the analysis. The model was built using forecasts for each SKU for the next 12 months.

The results of the first model were used to build a more specific model, which analyzed only one plant and one product group to determine the effects of the new product assignments on the plant, as well as the load level on a line. For those SKUs that were produced at multiple locations, IBM ILOG LogicNet Plus XE helped the customer determine the optimal quantities to produce each month on each production line.

Benefits

Based on the results from IBM ILOG LogicNet Plus XE, the company was able to realize considerable cost reductions while maintaining desirable plant utilization levels with minimal investment. The customer was able to realize a net impact on its bottom line of U.S.\$3.2 million. Additionally, the company was able to create a consistent, fact based and structured methodology for product sourcing decision making. As a direct result of this project, the customer identified opportunities for transportation and logistics improvements, and analyzing the impact on inventory due to sourcing changes.

Products and services used

Software

IBM® ILOG LogicNet Plus XE



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Isuzu Australia takes the road to collaboration success with IBM® WebSphere and Lotus technologies

Overview

■ **Problem**

Isuzu Australia Limited (IAL) has a large national dealer network which is the driving force behind the business. The company needed a solution to improve the speed and accuracy of communications between head office and the dealerships as well as facilitate increased collaboration with business partners.

■ **Solution**

IAL chose to implement IBM WebSphere® Portal linked to other collaboration tools including Lotus® Sametime®, Lotus Quickr™, Portal Document Manager (PDM) and Web Content Management.

■ **Benefits**

Communications both internally and externally with dealers and partners have been radically improved. Information is now hosted centrally on a web-based portal, allowing all parties to access real time, up to date information at any time.



About Isuzu Australia Limited

Isuzu Australia Limited is a wholly-owned subsidiary of Isuzu Motors Limited (Japan), and is responsible for the marketing, distribution and support of Isuzu Trucks in Australia. With just 65 employees in Australia, IAL depends largely on its national dealer network of over 1000 dealership staff to drive its business and maintain its market leading position.

Looking towards the latest technology

The Isuzu Truck national dealer network is the retail end of the distribution channel for Isuzu Trucks sold in Australia, hence the requirement for access to the latest materials and information from IAL head office. In 2005 the company (IAL) was distributing all information to dealers manually in printed format via surface mail. Not only was this system

expensive and time-consuming, it was also vulnerable to errors. Dealers were responsible for the internal distribution of the various materials, resulting in frequent failure to reach the appropriate dealer recipients. In addition to this any errors or update to materials meant a repeat of the above process, and again there was no immediate confirmation of receipt and use by dealers of the up to date information.

It was evident to IAL that both internal and external communications could be improved through utilisation of new technologies. Aninka Morhall, Staff Operations Manager at Isuzu Australia's Head Office, in Port Melbourne, was tasked with sourcing an online portal and content management solution to supercede the existing manual processes.

Selection of a portal

Morhall evaluated solutions from a number of leading vendors, but settled on IBM WebSphere Portal along with Workplace Web Content Management (WCM). Commenting on IAL's reasons for selecting IBM technology Morhall said, "We chose WebSphere Portal and WCM because this solution was more capable of meeting our needs than the other offerings in the market, in particular in terms of its scalability. We were also interested in all of the extra collaborative components. As a long time Lotus Notes® user we knew these systems would integrate seamlessly with our existing technology platforms."

"We chose WebSphere Portal and WCM because this solution was more capable of meeting our needs than the other offerings in the market, in particular in terms of its scalability. We were also interested in all of the extra collaborative components. As a long time Lotus Notes user we knew these systems would integrate seamlessly with our existing technology platforms."

- Aninka Morhall, Staff Operations Manager, Isuzu Australia

IAL also elected to expand its collaboration capabilities by adding Lotus Sametime instant messaging, Lotus Quickr for team based project management and Portal Document Manager (PDM) to create a central repository for documents. "These additional systems were implemented to enable teams to collaborate around specific projects and documents and to cut down on sharing of documents as email attachments" Morhall commented.

The portal and collaboration tools were rolled out to staff and 1000+ dealership staff, with access controlled by a complex security structure allowing the right people to see the right content at the right time. The systems were quickly adopted by the majority of users and today are used companywide.

Collaboration pays off

The implementation of the WebSphere Portal enhanced by Lotus collaboration tools has totally transformed the communication processes between Isuzu and its dealer network. Today all materials are hosted on the portal and dealers simply have to log on to instantly access the latest information. The result has meant vastly improved, more accurate and timely communications with IAL's dealer network enhancing most areas of their business operations, and even increasing their ability to sell more effectively. The dealers can also log onto Sametime instant messaging through a web interface, enabling them to communicate with head office contacts in real time and quickly trouble-shoot any current queries.

Internal communication within IAL has also improved. Staff can now publish information themselves, expediting access to important information. Instant messaging has also meant employees rely less on email and more business decisions can be made in real time. The discipline of using a central document repository hosted online means fewer documents are shared as attachments and users can be more confident they are accessing the most recent version.

Morhall explained, “Now our company announcements are no longer sent by email – people know they have to log into the portal if they want to be kept up to date. Anyone can publish information, it’s simply reviewed for appropriateness, and then it is posted immediately. All our business policies and procedures are hosted on the portal as well.”

Since the portal went live in 2006 Isuzu has realised substantial business benefits. The company has enjoyed cost reductions since it no longer has to print materials for the dealer network and distribute them through the mail. Cost aside, Isuzu now distributes information to its dealers instantaneously, confident in the knowledge that dealers are always just a click away from the latest information. This has reduced errors across the entire dealer network.

Armed with the latest technology tools, collaboration and knowledge sharing has increased – for example teams can discuss a particular document over a web meeting, or individuals can access the real-time status of a project, task or milestone simply by logging into the portal.

Continuing the journey

The implementation of WebSphere Portal and Lotus collaboration tools has given IAL a taste for more technology and the productivity gains it can deliver. Morhall is currently rolling out the use of wiki technology which is available in Quickr, “We are going to start using wiki technology in Lotus Quickr to further improve information sharing – that’s our latest exciting project here.” Morhall is also looking at incorporating IBM’s Workplace learning management system into the portal to further extend knowledge sharing and collaboration based e-learning throughout the organisation.

Leading Communication for the Truck Market leader

As Australian truck market leader for 19 consecutive years (20 by the end of 2008), Isuzu Australia recognises that maintaining this enviable record is dependent on providing leading products and services. IAL is also committed to demonstrating leadership in all areas of its operations, and by selecting IBM WebSphere Portal and Lotus Software technologies to provide leading communications between IAL and its dealer network its market leadership is more easily maintained.

“Now our company announcements are no longer sent by email – people know they have to log into the portal if they want to be kept up to date. Anyone can publish information, it’s simply reviewed for appropriateness, and then it is posted immediately. All our business policies and procedures are hosted on the portal as well.”

- Aninka Morhall, Staff Operations Manager, Isuzu Australia



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Jibes creates dynamic demand planning for semi-conductor industry using enterprise mashups from IBM



Overview

■ Challenge

Provide real-time, customizable manufacturing information for semiconductor supplier

■ Solution

Enterprise mashups of information from semiconductor manufacturer's portal and supplier's ERP system

■ Key Benefits

— Reassigned one full-time employee to higher value work; significant decrease in planning and production mistakes; reduced total cost of ownership by 40%

Powerful business-to-business tools for building portals and business intelligence solutions exist in the marketplace today, and IBM is a well-known leader in the marketplace for such enterprise software solutions. It's no surprise, then, that IBM is also at the forefront of Web 2.0 development initiatives, empowering users to access, manage, visualize and reuse assets without the need for IT expertise.

"The ability to program an Excel® spreadsheet is all that is necessary to customize robust mashups that provide a flow of real-time information to users, whether those are employees or customers," says Ivo-Paul Tummers, CEO

of Jibes, an IBM Business Partner specializing in enterprise mashups using IBM Websphere® sMash and IBM Mashup Center (composed of IBM InfoSphere™ Mashup Hub and IBM Lotus® Mashups). Jibes is based in Amsterdam, the Netherlands.

A mashup is a lightweight Web application created by combining information or capabilities from more than one existing source to deliver new functions and insights. "Companies don't want to be compelled to undertake major reengineering projects that involve heavy IT investments," says Tummers. "Mashups provide quick, relatively inexpensive situational solutions that can grow and even become part of upgrades to larger projects. Once we implement them using IBM software, business users can adapt them to their changing needs."

Enabling creativity and control

IBM has a complete portfolio of tools to create and manage enterprise mashups—IBM Mashup Center for the assembly and information centric aspects of mashups and WebSphere sMash for dynamic scripting of mashup components. IBM Mashup Center is a new commercial version of the Alpha Works QED Wiki solution that proved to be highly popular with users. WebSphere sMash emerged from

Project Zero, a community-driven development site that brings IBM's considerable development resources to the Web 2.0 market. Project Zero represents the people that build and use WebSphere sMash and the incubation of new technology that will deliver in future versions of WebSphere sMash. Why did Tummers think that IBM would be the right partner for his venture?

"IBM has the ability to enable users to be creative in structuring their own information assets, while ensuring that the data is absolutely accurate and secure," says Tummers. "You have to be certain that only authorized persons will access the data and that the data will be complete. Enterprise mashups have to provide both creativity for the user and control for the owner of the information, and IBM has the skills to bring those together."

Leveraging information for better business performance

Jibes's work with a major semiconductor manufacturer illustrates how serious big business is about adopting mashup solutions and how IBM is helping Jibes meet that need.

The semiconductor industry adjusts production goals on an hourly basis, which creates a volatile situation for subcontractors. Jibes's client, the

semiconductor manufacturer, needed to be able to feed its suppliers information on its "reschedule-ins" and "reschedule-outs"—its information on rescheduling more or less product to meet a fluctuating market. One of the suppliers was Aalberts Industries, which supplies precision engineered components and frames.

"For Aalberts Industries, the impact of this information could be tremendous," says Erik Zantinge, Division Director Industrial Services. "It's not just a question of putting in or taking out one machine. The re-ins and re-outs of the bigger company can force changes in the whole value chain. Aalberts Industries has to analyze the information, simulate various scenarios and recalculate its own plans before it puts information into its ERP system. It did this using huge Excel sheets, and doing a lot by hand, which is inefficient, fault sensitive and does not allow the company to respond to the data in real time."

The semiconductor company uses portal technology to provide all its employees with access to the information they need to do their jobs. This portal technology can also be extended to



partners, but Aalberts Industries doesn't have a portal or any vehicle for making the information accessible to its needs. Nor was it about to undertake a lengthy and expensive integration project.

"Aalberts Industries wanted to throw away the spreadsheets and work with real-time information, but there was no infrastructure to attach the information to," says Zantinge.

From spreadsheets to intuitive graphics

Jibes put together different widgets in a graphical user interface, which combines the flow of information from the semiconductor manufacturer's portal and the ERP system of Aalberts Industries.

"We got rid of the Excel spreadsheets, and we got Aalberts Industries comfortable with the idea of the one-screen solution," says Rob Guikers, CTO of Jibes. "But then Aalberts Industries said, 'Every time we have a question,

the parameters change—we're looking at different factors. We have to be able to combine and recombine different information streams from the two sources.' What they are actually saying is that most solutions are too static. That's where the mashups came in."

Using IBM technology, Jibes integrated the information from the semiconductor company's portal with the ERP system of Aalberts Industries using a graphical building-block approach that enables users to combine the two as they like. "The users mash up the data from their own ERP system and the semiconductor company's portal, choosing from business intelligence feeds and internal databases as well as the re-ins and re-outs," says Guikers. "One block is the re-ins and another block is the forecasting information. They can choose a graphical tool which shows a timeline widget to create their own timeline and then show their work orders or their sales orders on a daily or hourly basis. And when the semiconductor company changes one of its demands, Aalberts Industries can analyze the impact on its work orders and its sales orders and connect to its own ERP system. The IBM technology ensures that the data is

pure and given only to the people who should have access to it in a simplified manner, and that's actually the unique selling point."

InfoSphere Mashup Hub provided the connectors that enabled Jibes to feed data from several data sources in the portal to the widgets. Staff can easily tag and rate the information assets so that data can be used and reused as needed. WebSphere sMash enables Web developers to create new feeds or widgets that Mashup Center does not provide and store them in the IBM Mashup Center catalog, where business users working can then visually assemble a browser-based application for their specific needs. WebSphere sMash and IBM Mashup Center provide browser-based assembly and scripting tools instead of requiring extensive coding, which provides the productivity we need in dynamic, situational applications. This has been essential in helping the staff of Aalberts Industries unlock the value of enterprise information and optimize business results.

Saving \$400,000 per year

The ability to access the information it needs in real time has saved Aalberts Industries one full-time employee (FTE), whose job it was to produce daily and hourly spreadsheets. That FTE now does more valuable work in the planning department.

In addition, Aalberts Industries is using the information available from the IBM and Jibes solution to avoid production overruns and other errors that occurred previously due to mistakes in calculations. The savings are not calculated yet, but may amount to \$400,000 per year.

"Enterprise mashups are producing good business results for Aalberts Industries," says Tummers, "and if Aalberts Industries is happy, the semiconductor company can be happy, too."

Enterprise mashups are designed to be simple to get up and running, but real savings come after the mashup is live—helping users quickly solve specific problems. As shown here, Mashups complement Portals—leveraging content in new ways for even greater return on investment. "The user makes changes at will, with no need for consultants or other IT help. That pushes down the total cost of ownership by about 40 percent for these projects. Creativity is up to the people who use the mashups," says Tummers. "IBM makes them secure for the owners of the information."



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WebSphere® software

Castilla y León Regional Government administers social services with IBM



Overview

The Social Services agency administers social programs for the regional government of Castilla y León, one of Spain's 17 autonomous regions.

■ **Business need:**

Spain's recent passage of a law promoting care and autonomy for dependent people compelled the agency to reengineer its IT systems to comply with new regulations as well as provide better service to citizens.

■ **Solution:**

Social Services decided to place all of its programs under a central process management system to automate much of its work and shorten its time for delivering services. For this, it selected an IBM® FileNet® Business Process Manager as its business process management (BPM) system, and Microstrategy for statistics and scorecard balancing. The agency also invested in IBM WebSphere® ILOG JRules, the market-leading business rule management system (BRMS), to facilitate the

development, deployment and maintenance of the business rules governing the complex decisions to be taken in the process. For instance, a rule-based decision service is used to score applications and assess eligibility. The system has allowed the agency to adapt quickly to the new regulatory framework, and provides greater flexibility for implementing future policy changes.

■ **Benefits:**

- Better service
- Rapid compliance
- Business user access to rules
- What-if simulation
- History of rules

The regional government of Castilla y León, one of Spain's 17 autonomous regions, administers a broad range of social programs through its Social Services agency. More than 50,000 people benefit from the agency's social assistance programs for the disabled, elderly and younger, and child protection. For more information on the agency, please visit www.jcyl.es

Challenge

Spain's recent passage of a law promoting care and autonomy for dependent people, including the elderly and disabled compelled the agency to reengineer its IT systems for implementing programs. The law not only introduced new social benefits, but backed them with precisely defined eligibility criteria. The agency launched the project, called Social Services Unified Access System (SAUSS), to comply with the new complex regulations, and more generally, provide better service.

Solution

The SAUSS project involved putting in place a new organization as a single point of contact for citizens and implementing a centralized process-oriented management system for granting benefits, automating the agency's work and shortening services delivery.

For this, the agency is relying on IBM FileNet Business Process Manager as its BPM system, Microstrategy for statistics and scorecard balancing, and IBM WebSphere ILOG JRules to facilitate the development, deployment and maintenance of the business rules governing the complex decisions to be taken in the process.

For instance, a rule-based decision service is used to score applications and assess eligibility.

Social Services' IT department no longer has to recode applications associated with SAUSS to implement new policies and regulations. All the business rules governing the new system are stored in a central repository. The agency's policy managers can access the repository through a Web-based interface to review, modify, test and redeploy rules to implement changes directly. Furthermore, as the decision logic is managed separately from business processes, policy changes have no impact on business processes themselves.

The new system has greatly improved the productivity of approximately 600 agency personnel. It lets them handle the greater number of cases resulting from the introduction of the new law. The system automates the processing of most of the paperwork, allowing the agency's staff to focus on handling exceptional cases. Even though the number of cases has increased significantly, each application is processed much faster, enabling the agency to deliver services in far less time on average.

The SAUSS system was assembled by Thales, a system integrator and IBM Business Partner. Two people—one from Thales and the other from the agency—were primarily responsible for developing the system. They prepared for the project

“We identified the business rule management system as a key component for improving the agility of our IT architecture in order to cope with regulatory and internal policy changes. We chose IBM WebSphere ILOG JRules because of the depth of its functionality, robustness, and ease of use and integration.”

***-- José María Molina,
Project Director, IT Department
Social Services, Social Services
Management, Family and Equal
Opportunity Council, Junta de
Castilla y León***

Products and services used

Software

- IBM WebSphere® ILOG JRules
 - IBM FileNet® Business Process Manager
 - IBM FileNet® P8 Platform
-



by attending an IBM WebSphere ILOG JRules training course given by IBM Software Education Services. In all, the project lasted one year. The system was developed to run in a Java environment with Microsoft® Windows 2000.

Benefits

The agency had gained significant benefits from the new system:

- Faster delivery of social benefits through a clear process that requires less interaction between the citizen and the administration
- Transparent and fair decisions through consistent scoring and application of eligibility criteria

- Empowerment of policy managers with a powerful, user-friendly interface that allows them to review, validate and maintain policies directly
- Flexibility to adapt faster to new and changing regulations
- Ease of integration with the IBM FileNet P8 Platform for developing custom enterprise systems
- Better management of business processes, which are impacted less by policy changes



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WSC14109-USEN-01

Latin American school lunch program Auction system for school food services



Overview

This University was founded in 1738, and is one of oldest in South America.

■ **Business need:**

The National School Assistance and Scholarship Board (JUNAEB) of this Latin American country needed a process that selected caterers based on the regions they covered and a set of standards for food and services.

■ **Solution:**

The University used IBM® ILOG CPLEX to model the problem, applying the criteria set by JUNAEB.

■ **Benefits:**

- *\$40 million saved per year*

A state-owned institution, the University mission is to advance technology, culture and economics in Chile. It has 25,000 full-time students and 1,300 faculty, and has distinguished itself by providing equal opportunity for higher education. Its engineering department won the Edelman Award in 1998 for developing optimization software models—some with IBM ILOG CPLEX—for the forest industry.

Challenge

More than 1.3 million students at 14,000 schools depend on JUNAEB of Chile to feed them daily. For decades the agency awarded contracts—amounting to about \$180 million annually—to caterers through a complex auction system that imposed few real restrictions. It resulted in huge losses for the Chilean government, and little control over the quality of the meals served to the students. JUNAEB needed a process that selected caterers based on the regions they covered and a set of standards for food and services.

Solution

The Industrial Engineering Department of the university created a new auction system for JUNAEB that restricts the final bidding to those companies able to meet a set of criteria for food and service quality, and allowing large catering companies to take advantage of their size by bidding on more than one region. The auction's vetting process includes an application based on CPLEX, which sorts through the bid proposals and selects those most closely matching the criteria. According to JUNAEB, the application has been directly responsible for saving the government of Chile \$40 million a year. This is equivalent to feeding 345,000 students over the course of one year. The system has also enabled JUNAEB to greatly improve the nutritional value of the meals and the conditions under which they are served.

Selecting the best candidates

The auction application selects the companies that meet a set of requirements for meals and services, and includes them in the bidding process. The requirements include the content and nutritional value of the meals, how many meals per day, and the system for distributing and serving them. Catering services have to submit their proposals for meeting the requirements in order to participate in



the auction. The country is divided into roughly 90 school districts, or territorial units (TUs), and the larger companies are allowed to take advantage of their size to bid on more than one region. To further ensure service quality, however, a limit is set on the number of TUs a catering company can bid on.

The university used CPLEX to model the problem, applying the criteria set by JUNAEB.

The solution sorts through the proposals, selecting those most closely matching the agency's requirements. The system uses two models: a reduced one for simple problems and an extended one for more complex problems. The first model uses 500

“The only tool that gave us the performance to solve the problem was IBM ILOG CPLEX. We were solving 700 problems, and each solution could not take more than two minutes.”

-- Latin American University



constraints, while the second uses 23,450 constraints. A key factor in the university's selection of CPLEX is the optimizer's speed. It enables the university to achieve a processing time of two minutes or less.

Benefits

The speed of CPLEX enables JUNAEB to quickly select the best candidates for the auctions. The new system processes contract proposals from companies throughout the country. Auctions are held for one-third of the TUs each year, with the winning contracts lasting three years. The total sum of the auctions is about \$180 million, and bids are typically

submitted by 30 companies. By imposing standards, the new system has also enabled JUNAEB to improve the nutritional value of the meals served to the students, and the conditions under which they are served. The system is expected to save the Chilean government at least \$40 million a year.

Project

The system was developed by three people in one month. It currently runs on a Pentium III computer with Windows® 2000. The application won the OR for Development award at the 2002 IFORS Conference.

Products and services used

Software

- IBM® ILOG CPLEX
-

“Those are official numbers from the government Chile. They save \$40 million per year [with the IBM ILOG CPLEX-based solution]. Those numbers consist of unit price before model and post model. The savings are on the order of 25 percent.”

-- Latin American University



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WSC14149-USEN-00

Metal part manufacturer

Global inventory positioning

Overview

■ **Objective:**

Competition and the opportunity to lower manufacturing costs led a global manufacturer of metal components and engineered alloys to move the manufacturing of certain products from the United States to China. Although the decision had already been made, company executives wanted to understand its inventory implications. The company had various business complexities to consider. Suppliers had unique contractual terms and certain types of customers had different service level requirements. Furthermore, customs clearance had a direct impact on the order-to-receipt time of raw materials.

■ **Solution:**

In light of their supply chain complexity, the company realized that they needed a sophisticated way to manage inventory. They worked with LogicTools (now IBM ILOG) to estimate the level of inventory required in the new configuration and determine where it should be positioned. Using



LogicTools' Inventory Analyst, a global inventory optimization solution, the company was able to determine the inventory levels for the new network configuration and identify opportunities for reducing inventory levels overall. The study also helped identify the key inventory drivers, which proved very different from those the executives intuitively focused on at the beginning of the project.

■ **Benefits:**

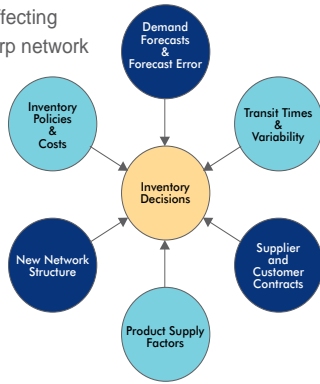
- Optimized positioning of inventory
- Identified key inventory drivers
- Reduced inventory costs by 10 percent

Accurately estimate inventory levels

The customer had different terms of service with each supplier. Some suppliers made to order, while others made to stock. Transit times and customs clearance were significant, and plants had fixed storage capacity for finished goods. The company had two types of customers—original equipment manufacturers (OEMs) that placed orders far in advance, and after-market customers that needed parts immediately.

The key business challenge for the parts manufacturer was to accurately estimate the level of inventory in light of the new manufacturing network and determine where it

Factors affecting AllumaCorp network



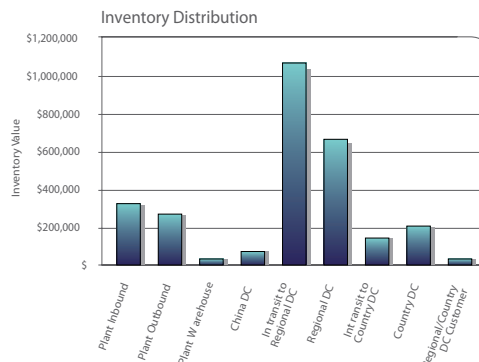
should be positioned in the supply chain. Management had zeroed in on two key drivers of inventory and wanted to understand the impact of both. Consequently, they wanted to understand the benefits of more accurate forecasting methods and the impact of higher service levels with a certain type of customer base. Finally, they wanted to consider the entire supply chain in making inventory decisions. The customer utilized Inventory Analyst to first determine where inventory should be positioned and then understand the inventory levels required for the new supply chain. A model was built to mirror the company's existing business and supply chain processes. Current supply chain configuration, demand forecasts and forecast errors, service level requirements, service time requirements, transit times and their variability, processing times and their variability, and inventory carrying costs for different stock-keeping units (SKUs) formed the key inputs.

Once it was clear to the customer that the inventory drivers they originally focused on had very little impact on inventory, they used LogicTools'

expertise to identify the actual inventory drivers of their supply chain. Although the new network had less safety stock due to repositioning of inventory, it had higher in-transit inventory and higher cycle stock levels. This indicated that the factors affecting in-transit inventory and cycle stock would have a larger impact on overall inventory levels in the new network configuration.

Benefits

Using the results from Inventory Analyst, the customer was able to optimally reposition its inventory across its supply network, resulting in an overall inventory reduction of 11 percent. The analysis suggested that most of the inventory be held at two tiers of the supply chain to support stringent committed service times.



The Inventory Distribution graph shows optimal positioning of inventory across the parts manufacturer's supply network.

Products and services used

Software

IBM® ILOG Inventory Analyst



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METRO Group moves closer to its “Future Store” vision with smart merchandising enabled by RFID.

Overview

■ Business Challenge

To meet rising customer expectations and stay ahead of the competition, METRO Group sought to enrich the shopping experience of its retail customers by providing them with valuable and relevant content—in real time, as they shop.

■ Solution

METRO Group and IBM worked together to create a first-of-a-kind “smart” solution for retail that tailors in-store merchandising messages by tracking product movement in real time. This same capability provides METRO Group with real-time business intelligence and the means to optimize its retail processes.

■ Key Benefits

- More engaging customer experience through detailed product information delivery
- Improvements in inventory and shelf-replenishment management
- Reductions in out-of-stock situations and lost sales through automated replenishment alerts



Based in Duesseldorf, Germany, METRO Group is the fifth largest retailer in the world, with some 290,000 employees working at over 2,100 outlets in 32 countries in Europe, Africa and Asia. Its brands include Metro Cash & Carry, Real, Media Markt, Saturn and Galeria Kaufhof (pictured above).

To be successful over the long term, retailers have to do a lot of things right, and do so consistently. It means having not only the right mix of products, but a retail experience that is compelling and satisfying enough to keep customers coming back. While creative and effective merchandising is essential to achieving this, it's just as important for retailers to meet a more basic requirement—that when a customer wants a product, it will be on the shelves and not out of stock. This last point underscores how important it is for retailers to seamlessly align their downstream retail operations—the parts of the business that customers see—with their upstream supply chain operations.

“Our use of RFID is improving our operational effectiveness as well as the shopping experience of our customers. Our relationship with IBM has been a strategic component of our RFID programs and one of the biggest factors in our success.”

— Dr. Gerd Wolfram, managing director, MGI METRO Group Information Technology

Business Benefits

- More engaging customer experience through personalized product information delivery
- Reductions in out-of-stock situations and lost sales through automated replenishment alerts
- Increased revenue through improved cross-selling capabilities
- Reduced inventory and logistics costs
- Improved sales associate productivity
- Ability to perform instantaneous inventory counts
- Significant expected reductions in logistical errors related to parts shipments

“Our success depends on our gaining the trust of the customer at every stage of the retail interaction. This means making sure we have the products our customers want and a retail shopping experience that rewards and builds on that trust.”

– Dr. Gerd Wolfram

The fact that it's always in motion due to constantly changing products, customer preferences and purchasing patterns, to name just a few, makes it even more of a challenge.

Another constant in retail is the steady upward trajectory of customer expectations, specifically around how technology can be used to improve and enrich the shopping experience. For a long time, rising retail expectations were focused on the quality and convenience of the online shopping experience. Retailers responded first by effectively emulating their brick-and-mortar experience online, and then moving beyond it by providing a richer array of information and services to supplement the online experience, ranging from detailed product information to user-generated content. Now there comes a new chapter in the technological evolution of retail.

Great expectations

Recognizing how much consumers have come to expect easy access to information in every sphere of their lives, one of the major international retailers—METRO Group (www.metrogroup.de) based in Duesseldorf, Germany—is pioneering the use of RFID. The crux of METRO Group's project is the use of RFID to automatically deliver the most relevant information to customers at different points of the purchase process, thereby making the customer experience more efficient, memorable and satisfying.

While METRO Group's importation of advanced technology into physical retail breaks new ground in the industry, the initiative actually builds on a number of first-of-a-kind projects employing intelligent RFID, albeit in a different part of the company's operations along the entire supply chain. It began in 2002, when METRO Group started working with a number of technology partners to lay the groundwork for next-generation retail processes, an effort that came to be known as the METRO Group Future Store Initiative. The first phase of the initiative culminated in the deployment of Europe's largest supply chain RFID solution. Designed and deployed with IBM and powered by IBM software, the solution enables the METRO Group to track shipments from its suppliers to its warehouses and distribution centers and then on to its outlets in Europe.

When METRO Group decided it wanted to extend the Future Store Initiative more deeply into its in-store retail operations, it again turned to IBM. As conceived by METRO Group, the project would focus on the company's Galeria Kaufhof department stores, a chain of more than 140 stores in Germany and Belgium focused primarily on fashion items. While the project would have a significant supply chain angle, its distinct emphasis was on weaving RFID deeply into the fabric of the customer's in-store experience.

Working closely with Kaufhof personnel, IBM Global Business Services conducted a detailed process assessment—covering everything from back-room operations and merchandising to shelf-replenishment and floor sales practices—and from that, designed a first-of-a-kind RFID solution that was implemented on a pilot basis in the men's department of a Kaufhof store in Essen. Working with a series of technology partners, IBM led the implementation of the RFID infrastructure.

RFID a good fit

The source of the solution's intelligence is the ability to detect the movement of products within the store via RFID, and then use that data to invoke and display information. This movement, in turn, corresponds to (and is driven by) specific actions on the part of the customer, such as removing an item from the shelves and bringing it into a dressing room. To enable this, each of the roughly 30,000 articles in the men's wear department in the pilot have an additional RFID tag, while RFID readers are placed at strategic spots throughout the store. On the shop floor, intelligence comes into play, when RFID readers embedded within "smart shelves" detect and record each time an item is removed from the shelf so that the data can be analyzed for patterns later. It's in the next stage—when the customer takes the item to try on in a reader-equipped smart dressing room—that the system's intelligence is manifested in a richer customer experience through showing additional product information and cross-selling ideas on a touch screen.

Once the product enters the premises, the system recognizes it and records it as a transactional event in METRO Group's merchandise information systems, where the IBM RFID tracking solution (implemented by IBM Global Business Services and the first to use the new global EPC Information Services, or EPCIS, standard) serves as a repository for all information. Leveraging underlying business logic, the system is then able to look up content associated with the product and display it to the customer in the form of suggestions ("Other products that would go well with that shirt include...") and information on other available sizes and colors for the product. This same type of automated assistance is also provided by an RFID reader-equipped "magic mirror." In the event a customer wants to retrieve a complementary product, or a different color or size, the system informs the customer whether it is in stock and where it is on the shelves or in the back room. Overall, the solution demonstrates how the "right" information can be used to create a more convenient and satisfying shopping experience.

Solution Components

Software

- IBM WebSphere® Application Server
- IBM WebSphere MQ

Services

- IBM Global Business Services
-

Smart solutions for retail

Incorporating RFID into its in-store retail operations, METRO Group broke new ground by enabling "smart" merchandising practices that provide a more customized and engaging customer experience. The solution's real-time sensing and reporting capability enables a quantum improvement in retail process efficiency, while providing METRO Group with the valuable insights into consumer trends it needs to optimize its product mix and increase its revenues.

By bringing RFID-based business intelligence into the physical retail environment and making it transparent, METRO Group is also dramatically improving the effectiveness of its decision making and processes. On an operational level, the system's dashboard-based reporting capability gives store managers a real-time window into on-site inventory and provides automated out-of-stock alerts, thus ensuring that the most popular products are always available to customers and lost sales are minimized. Dashboard analytics can also alert managers to potential product abnormalities or problems by flagging patterns, such as a product that is frequently taken from the shelf and/or tried on but not purchased. Over the longer term, METRO Group can also harvest the business intelligence generated by the solution to gain insights into customer buying trends to ensure that it stocks the right products on its shelves. This helps METRO Group to not only maximize the revenue efficiency of its merchandising strategies, but also improve the accuracy of inventory counts, minimize inventory carrying costs and reduce the logistics costs of returning unsold products to suppliers.

Smart means efficient

With cost control a concern for all retailers, the solution's positive impact on process efficiency further strengthens METRO Group's business case for smart retail. It starts at the loading dock door, where RFID readers provide workers with detailed information about goods received from the warehouse, thus minimizing the need to physically inspect boxes and significantly reducing the cost and time of the receiving process. On the retail floor, the ability to track down products on the shelves or in inventory means employees can spend less time searching and more time helping—and selling to—customers. By combining smart tools for sales associates with the cross-selling benefit of smart dressing rooms, METRO Group is putting in place a strong foundation for faster revenue growth, increased customer satisfaction and stronger customer loyalty.

Dr. Gerd Wolfram, managing director of MGI METRO Group Information Technology, sees the Galeria Kaufhof project—which was one of the first to use the new EPCIS RFID standard that METRO Group helped develop—as clear evidence of the benefit of smart technology in all aspects of retail. “Our use of RFID is improving our operational effectiveness as well as the shopping experience of our customers,” says Dr. Wolfram. “Our relationship with IBM has been a strategic component of our RFID programs and one of the biggest factors in our success.”

For more information

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

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Moosejaw Mountaineering reaches new heights of customer engagement through social commerce.

Overview

■ **The Need**

To thrive in the highly competitive market for outdoor adventure gear, Moosejaw Mountaineering needed to create a customer experience that would engage a customer community whose appetite for extreme sports is matched by a hunger for communication and collaboration.

■ **The Solution**

Moosejaw sought to make its site the go-to destination for young, hip high school and college students and for hard-core outdoor enthusiasts by embedding rich community features into its online commerce experience, thus becoming one of the first outdoor-adventure retailers to make multichannel “social commerce” the cornerstone of its growth strategy.



Based in Madison Heights, Michigan, Moosejaw Mountaineering, Inc. is one of the nation's leading outdoor-adventure retailers. With seven retail locations employing 250 in Michigan and Chicago, the company's online retail, Moosejaw.com, was rated a top 50 Web site according to Internet Retailer.

■ **Key Benefits**

- *Increased revenue from an expected increase in conversion rate (based on an initial increase to 50 percent)*
- *Expected increase in customer loyalty and word-of-mouth expansion through a more engaging and collaborative online retail experience*
- *Ability to deliver seamless messaging, programs and customer experience across all channels*
- *Expected increase in customer satisfaction through richer, more informative pre-purchase support (e.g., customer ratings)*

Online commerce has changed a lot in the decade since it entered into the cultural mainstream. Driven by relentlessly rising customer expectations, sites have become easier to use, merchandising has improved and, to put it simply, companies have gotten better at online commerce because they've come to understand its many nuances. In spite of these changes, however, the essential character of online retail—namely, the extension of traditional retail practices to the Internet channel—has remained largely unchanged. So, too, have some basic and long-held assumptions about the way consumers buy and what they are looking for from an online retailer.

Business Benefits

- Increased revenue from an expected increase in conversion rate (based on an initial increase to 50 percent)
- Expected increase in customer loyalty and word-of-mouth expansion through a more engaging and collaborative online retail experience
- Ability to deliver seamless messaging, programs and customer experience across all channels
- Expected increase in customer satisfaction through richer, more informative pre-purchase support (e.g., customer ratings)
- Stronger brand through a more consistent multi-channel experience

“Our strategy has been to reinvent the way people shop for outdoor, surf, skate and snowboard apparel and equipment. IBM – through its technology and retail thought leadership – has been instrumental in helping us realize this vision.”

– Jeffrey Wolfe, COO,
Moosejaw Mountaineering

The traditional view of online transactions is anchored on the idea that online stores are first and foremost a venue for transactions, which, by and large, tend to be tightly structured interactions involving the buyer and the retailer. Within this interaction, the retailer's key job is to provide customers with the information they need to purchase – such as pricing, product descriptions and orderly merchandising – and to deliver all within the context of a superior customer experience. However, the way customers are seeking and processing this information is beginning to change, and that's expected to have a big impact on tomorrow's online experience.

The biggest reason is the sweeping impact of Web 2.0, a term that describes a paradigm shift in the way people use the Internet to interact with each other – and with information. The key earmark of Web 2.0 is the exploding popularity of user generated content, examples of which range from blogs, wikis and discussion groups to YouTube and MySpace. What each has in common is a decidedly “bottom-up,” approach to generating and sharing information that's heavy on collaboration and light on hierarchical structures. So how does this impact online retail? The answer, in large measure, lies in demographics and changing expectations.

Community meets commerce

When the younger consumers driving the Web 2.0 wave want to buy online, they'd prefer the same kind of collaborative, bottom-up information exchange in their shopping experience. This, in effect, resets the goals and parameters that retailers have to consider in configuring their online strategies. While issues like merchandising and navigation remain important, retailers also need to provide an environment that supports the interaction of customer communities, which are exerting more and more influence on buying behavior. This is especially true for products that reflect a lifestyle or a set of emotional values. That's why Moosejaw Mountaineering (www.moosejaw.com), a fast-growing retailer specializing in outdoor, surf, skate and snowboard equipment and apparel, is such a good example of how it can work. Relying on a host of retail solutions from IBM and IBM Business Partner CrossView, Moosejaw sought to make its site the go-to destination for young, hip high school and college students and for hard-core outdoor enthusiasts by embedding rich community features into its online commerce experience, thus becoming one of the first retailers to make “multi-channel, social commerce” the cornerstone of its growth strategy.

Now a fast-growing chain with seven stores and 250 employees, Moosejaw owes much of its success to a fiercely loyal customer base. The roots of this loyalty lay in the company's ability to make shopping fun, as well as its ability to provide the right product mix, strong product and technical support and

a constant drive to develop unique, innovative ways to communicate with their customer. But with no shortage of competitors in the “outdoor adventure” space—many large and well known—Moosejaw faces the ongoing challenge of making itself the destination of choice. Rising to this challenge, the company has introduced a steady stream of features that have resonated with customers, including over 50,000 customer reviews, texting of tracking numbers and promotions to mobile phones, and its Moosejaw Madness community, where customers post photos from their latest adventures, read the irreverent Daily Remark and immerse themselves in Moosejaw’s unique culture. While features like these have been highly successful, Chief Operating Officer Jeffrey Wolfe believes that Moosejaw has only scratched the surface of what it can do for its customers. “We are on the verge of truly blurring the lines between Web, retail, mobile, catalog, call center and kiosk, taking the best of each channel and making it possible across all channels.”

Moosejaw’s approach to multi-channel, social commerce was to implement a new solution from the ground up with help from IBM and IBM Business Partner CrossView. One of the key benefits of the solution is its ability to create a seamless, interactive, community shopping experience across every sales channel. Customers can interact with Moosejaw staff and with other customers on the Moosejaw Web site and then connect those threads on their mobile phones and when they come into the Moosejaw retail stores. Perhaps more valuably, it provides Moosejaw with a ready-made platform for integrating these social networking capabilities deeply into its commerce platform. Imagine, for example, a customer looking for a tent suitable to use at 20,000 feet and 20 below zero. Instead of simply searching through a catalog, customers can now search by a product’s rating, while also taking into account customer profiles that include product usage experience. Getting product feedback from someone who has actually used that tent on Mount Everest or K2 is a far cry from standard catalog information—and that’s exactly what Moosejaw is shooting for. Key to the realization of this vision is the company’s work with IBM Toronto Software Lab, which is working with Moosejaw to develop this breakthrough capability.

Moosejaw’s physical stores also figure prominently in its strategy. A standout feature of the new solution is its ability to provide truly seamless support to—and thus create a common, superior experience through—all of Moosejaw’s channels. Key to this capability is CrossView’s Point of Sale solution which extends the capabilities of IBM WebSphere® Commerce into retail stores with a solution that utilizes WebSphere Commerce as its engine at the enterprise and IBM WebSphere Remote Server in the stores. CrossView’s solution utilizes a common information platform based on IBM DB2® and validated for the IBM Retail Integration Framework, making it easy for Moosejaw to extend its

Solution Components

Software

- IBM WebSphere Commerce
- IBM WebSphere Remote Server
- IBM DB2

Hardware

- IBM SurePOS™ 500 Express

Services

- IBM Toronto Software Lab
- IBM Global Technology Services
- IBM Retail Store Solutions

IBM Business Partner

- CrossView

Timeframe

- Core platform implementation: 9 months
 - Social commerce platform: 5 months
-

What Makes it Smarter

Moosejaw Mountaineering is making itself one of the leading places to be for outdoor adventurers by leading the way in the integration of social networking capabilities like blogging, group discussion and customer product ratings across all of its retail channels.

online channel programs and tactics into its store environment. For instance, using IBM SurePOS 500 dual-screen point-of-sale terminals in-store customers are now able to buy, ship and pay with the exact same services they are familiar with online, and they will be offered the same targeted promotions and cross-sells while they read reviews, blogs and recommendations. With all this new technology, that same fun and irreverence that has been a part of the Moosejaw culture from the beginning will now be part of the in-store check-out process.

Multichannel benefits

To enable a consistent shopping experience for customers across channels, the Moosejaw solution integrates and registers orders and inventory changes for every channel, offering increased visibility and optimum resource allocation across channels. The multichannel capability also provides Moosejaw's in-store sales associates and call center agents with the tools they need to provide more interactive and insightful support to customers. It's seen in the small things, like being able to tell a customer how close they are to a reward point threshold or asking about their satisfaction with a recent purchase. But it's also seen in the bigger things, like the system's ability to see inventory in near real time so an associate can find just the right Patagonia coat for a customer—whether it's in the store, in the warehouse or at a supplier's warehouse—and send the order via XML straight to the other shop, warehouse or supplier for processing and fulfillment. It's seen in the way it enables call center agents to get a full profile of a customer and provide the most knowledgeable and comprehensive support.

Altogether, it's about providing the kind of customer experience that will continue to make Moosejaw the premier destination for the outdoor, surf, skate and snowboard community and in the process enable Moosejaw to sustain its high rate of growth. Wolfe sees the company's advanced social commerce capabilities playing an important role by strengthening loyalty, increasing the conversion, or "browse-to-buy," rate of the Moosejaw site and by building word-of-mouth support, which thus far has been one of the biggest factors in its growth. "Our strategy has been to reinvent the way people shop for outdoor, surf, skate and snowboard apparel and equipment," says Wolfe. "IBM—through its technology and retail thought leadership—has been instrumental in helping us realize this vision."

For more information

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Mxtran connects consumers with mobile commerce using IBM Lotus Expeditor

Overview

■ **The Challenge**

Provide convenient payment options for cell-phone users regardless of wireless carrier or phone technology

■ **The Solution**

A flexible, reliable “wallet phone” radio frequency identification payment platform using IBM® Lotus® Expeditor software with integrated IBM DB2® Everyplace® and IBM WebSphere® MQ Everyplace components

■ **Key Benefits**

- *Open Lotus Expeditor platform speeds the development of new features and helps lower development costs*
- *Stability of the Lotus Expeditor platform helps keep service available for customers*
- *Remote management saves time and costs when managing more than 3,000 devices across Taiwan and China*
- *The IBM DB2 Everyplace and IBM WebSphere MQ Everyplace components of Lotus Expeditor form a security-rich, reliable data transmission mechanism that helps keep consumer information safe*



For the billions of cell phone users around the globe, having secure, convenient payment options is the linchpin that makes mobile commerce a reality. With 90 percent of the world's population predicted to have access to cell phone coverage by 2010, providers of cell phone payment technologies like Taiwan's Mxtran, Inc. have a virtually limitless field of potential customers.

Mxtran, a recently founded subsidiary of Macronix International Co., develops and delivers mobile payment services and solutions to a broad variety of customers. These offerings range from the creation of smart card systems to embedded system design to corresponding application development efforts. Operating in both Taiwan and mainland China, the organization's

more than 100 employees follow a model for cooperative development that promotes innovative concepts and the creativity and originality required to succeed in an ever-more competitive marketplace.

The company's solution, called Payeeton, removes the barrier of entry for entering mobile commerce with a comprehensive platform to lower operational costs and enforce billing strategies. Payeeton acts as a flexible platform for diversified mobile commerce services, allowing Mxtran clients to support both proximity payment and mobile payment via short message service (SMS) for prepaid, online paid and post-paid services including e-ticketing, e-coupons, access control, membership management and

Key Components

Software

- IBM Lotus Expeditor with IBM DB2 Everyplace and IBM WebSphere MQ Everyplace
- IBM Rational Software Architect for WebSphere Software
- IBM Rational ClearQuest
- Linux

Hardware

- IBM Power 570
 - IBM System Storage DS4800
-

more. Mxtran leverages extensive integrated circuit expertise to deliver highly customizable, portable applications and payment services in a single handset.

Cutting-edge technology bridges numerous industries

When the company was founded in 2006, Mxtran found itself at the hub of a unique and challenging intersection of technologies. The company planned to develop a “wallet phone” offering to take advantage of the rapidly expanding cell phone market, requiring expertise spanning semiconductor technology, finance, Internet communications, mobile business and security and application development.

Partnering with local telecommunications companies and retailers, Mxtran designed a solution that would involve attaching radio frequency identification (RFID) tags to cell phones in the form of the company’s advanced Smart Film technology. Adding these stickered tags to a phone’s subscriber identity module (SIM) card would allow the phone to act as a prepaid credit card, so users could load funds onto the wallet phone device and subsequently use the phone to purchase goods at retailers, movie and concert tickets or transit passes, for example. “Our vision for our service was cutting-edge and completely new,” says David Song, security officer at Mxtran. “While most companies operate within one or two of the fields we combine, Mxtran is the only mobile commerce business to unite integrated circuit manufacturing, terminal device manufacturing and transaction processing platforms.”

To speed up the creation of required wireless infrastructure and the in-store devices necessary to register financial transactions, Mxtran began the search for a world-class IT vendor with a platform that would help connect enterprise banking with retail transactions and customer cellular devices. “Since Mxtran grew out of the semiconductor world, the company felt it crucial that we work with a technology vendor familiar with the banking industry,” says Song.

The prevalence of IBM technology throughout the financial sector was the deciding factor. “IBM has unbeatable experience and the technology is widely used across the major APAC financial institutions,” explains Steve Chang Hsu, senior engineer at Mxtran. “That level of trust made IBM the natural choice to help ease the integrations and interactions critical to our success.”

IBM Lotus Expeditor offers stable, flexible platform for mobile commerce

Mxtran worked with IBM Global Technology Services and IBM Software Services for Lotus to design a flexible operating infrastructure based on a customized version of the IBM Lotus Expeditor platform. Mxtran now has a new RFID-based wallet phone service offering that it can provide to consumers. The Lotus Expeditor software offers a stable operating platform, helping to ensure that consumers have access to funds virtually wherever and whenever they need them.

The Lotus software serves as the comprehensive integration platform for the solution, coordinating communication between the wallet phones and the payment terminals in retail locations. "Lotus Expeditor offered us the secure features we required in a very open framework," explains Chang Hsu. "With that openness, we were confident we could continue to evolve the platform over time."

The payment terminals are embedded Linux® devices that integrate the merchants' point-of-sale (POS) environments with the Lotus Expeditor platform. Running a client version of the Lotus Expeditor software, the terminals rely on the embedded IBM DB2 Everyplace information management component to synchronize blacklists with the core system daily and to import promotional data. Back-end financial transactions are managed using the embedded IBM WebSphere MQ Everyplace component. WebSphere MQ Everyplace provides real-time data transfers between the client POS platform and the prepaid accounts hosted in Mxtran's core environment.

Lotus Expeditor helps lower costs of management and development

Adopting Lotus Expeditor has allowed Mxtran to realize significant returns in the form of reduced management and development costs. The IBM team designed the solution so that Mxtran can perform most of the support for the payment terminals remotely. "Since our devices are spread over a very large distance, visiting each device individually would be a tremendous drain on our resources," says Chang Hsu. "By enabling us to repair and update terminal devices remotely, Lotus Expeditor is saving us tremendous maintenance time and effort."

"From end to end, IBM provides the technology that keeps our customers ready to purchase. With Lotus Expeditor and the rest of our IBM software and hardware, we are prepared to grow in lock step alongside the blossoming cell phone market."

*—Steve Chang Hsu
Senior Engineer
Mxtran*

“IBM has unbeatable experience and the technology is widely used across the major APAC financial institutions. That level of trust made IBM the natural choice to help ease the integrations and interactions critical to our success.”

*–Steve Chang Hsu
Senior Engineer
Mxtran*

Furthermore, the Lotus software offers a standards-based, flexible infrastructure that is easy to design for, encouraging future system integration and easing future growth efforts. “Lotus Expeditor actually reduced and eliminated some development costs—for example, we don’t need to write code to synchronize the remote terminals and the central server,” says Chang Hsu. “That makes it far easier to adapt our platform and capabilities as the marketplace evolves, giving us an edge against competitors.”

DB2 and WebSphere MQ help ensure security of mobile transactions

Integrated with Lotus Expeditor, WebSphere MQ Everyplace messaging and a DB2 Everyplace relational database and enterprise synchronization server provide a security-rich, reliable data transmission mechanism that helps keep consumer information safe. “With the WebSphere and DB2 components of Lotus Expeditor, we can trust that information gets to its intended location no matter the time,” says Song. “Our customers gain the reliability to shop whenever they need to, and their respective financial institutions can be confident that our transactions are secure and foolproof.”

IBM Rational tools help lower the cost of back-end development

Behind the scenes, Mxtran uses IBM Rational® Software Architect for WebSphere software, a comprehensive modeling and development environment. IBM Rational ClearQuest® is used for comprehensive software change management—including defect tracking, process automation, reporting and lifecycle traceability—providing Mxtran with better visibility and control of its software development lifecycle.

“Rational software helps us to develop our business logic and refine our database I/O, allowing us to maximize the capabilities of Lotus Expeditor and our other IBM software components,” says Chang Hsu. “Combined, our solution eases deployment and management across the board, increasing the return on our software development over time.”

IBM hardware supports superior performance

Supporting Mxtran's Lotus Expeditor platform with outstanding performance and mainframe-inspired reliability, an IBM Power™ 570 server and IBM System Storage™ DS4800 disk system help ease the management of growth, complexity and risk. "From end to end, IBM provides the technology that keeps our customers ready to purchase," says Chang Hsu. "With Lotus Expeditor and the rest of our IBM software and hardware, we are prepared to grow in lockstep alongside the blossoming cell phone market."

For more information

For more information on IBM Lotus Expeditor, please contact your IBM sales representative or IBM Business Partner, or visit ibm.com/software/wireless/wctme

"Lotus Expeditor offered us the secure features we required in a very open framework. With that openness, we were confident we could continue to evolve the platform over time."

*—Steve Chang Hsu
Senior Engineer
Mxtran*



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SWC14021-USEN-00

Plastic Goods Maker Supply Chain Master Planning Solution

Overview

■ **Objective:**

With worldwide operations and billions of dollars in annual sales, a global manufacturer of plastic products undertook an initiative to rationalize the manufacturing network of its fixtures division to improve customer service levels and streamline costs. With seasonal business and tight production capacities, determining the best way to build inventory for peak demand was a key issue, as well as increasing capacity to meet next year's demand.

■ **Solution:**

The company worked with LogicTools (now IBM ILOG) to determine the optimal month-by-month production plan for each division's products to meet customer demand, reallocate assets to better utilize capacity, and determine the number and type of machines to buy for each facility. Using IBM® ILOG LogicNet Plus XE, a network design and planning solution, the customer realized a net impact to its bottom line of



U.S. \$3 million through cost reductions of U.S. \$2.4 million and increased sales of U.S. \$600,000 by meeting 100 percent of customer demand. The company also significantly reduced the number of expedited shipments and transfers between facilities, which provided additional savings.

■ **Benefits:**

- *Improved production planning*
- *Customer demand met 100%*
- *Improved customer service*
- *Reduced shipping costs*

Optimal production planning

The customer's division manufactures and ships products out of four North American plants. Its customers include many Fortune 500 consumer goods companies that typically receive product shipments directly from the plants through full truckload or less than truck load. The production process for fixtures consists of two stages, and each requires a unique type of machine. Furthermore, the output of the manufacturing network is constrained by available hours and the number of machines at each facility.



The division used IBM ILOG LogicNet Plus XE to accomplish several key objectives, including:

- Determine a month-by-month production plan that would meet demand forecasts at minimum cost and simultaneously reduce production bottle-necks.
- Determine the best configuration for current machinery and decide whether additional machinery was needed.
- Determine which types of machinery to acquire and identify the best place to locate the equipment.
- Analyze the above objectives under a variety of production and transportation assumptions.

The company utilized IBM ILOG LogicNet Plus XE to capture the current configuration of the manufacturing network and then determine the optimal production plan to meet customer demand at minimum

cost. Production costs and capacities, lane-by-lane transportation costs, speed of manufacturing, and availability of machines all formed some of the key inputs for the analysis. For those stock-keeping units (SKUs) produced at multiple locations, IBM ILOG LogicNet Plus XE helped the user determine the optimal quantities to produce monthly at each location.

Benefits

The customer reduced costs by U.S.\$2.4 million, met more customer demand and increased sales by U.S.\$600,000, resulting in a net bottom-line impact of U.S.\$3 million with minimal investment in new machinery. Customer-order fill rates were improved, and expedited shipments were significantly reduced. During the study, additional opportunities were identified to reallocate key machinery among the plants. The impact on cost and customer service was quantified with a variety of scenarios. Further analysis included dynamic reassignment of customers among the plants and consolidating SKUs. In addition to the U.S.\$3 million mentioned above, the customer identified a future impact on the bottom line in the range of U.S.\$4 million to U.S.\$6 million.

Products and services used

Software

IBM® ILOG LogicNet Plus XE



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SBI Sumishin Net Bank: A full-banking service, Internet-only bank

Overview

■ **Business Challenge**

In Japan, competition in the Internet banking business has been intensifying. In this environment, SBI Sumishin Net Bank, Ltd. aimed to bring to market a broad product lineup in a shorter period than other financial institutions. To achieve this goal, the bank needed to meet strict technical standards imposed on Japanese financial institutions, while seeking a competitive advantage.

■ **Solution**

SBI Sumishin Net Bank asked IBM Japan to develop a totally new Internet banking platform—not to construct one based on existing assets. Development was characterized by the use of an accounting system application package and a service-oriented architectue (SOA) framework.

■ **Key Benefits**

- *A total of approximately 600 billion yen in funds was deposited and 400,000 new accounts were opened after only 18 months since the start of operations.*
- *By adopting the framework approach, implementation risks were substantially reduced, as of March 14, 2009*



Headquartered in Tokyo, SBI Sumishin Net Bank is an "Internet-only" bank established as a joint venture between SBI Holdings and Sumitomo Trust & Banking.

The banking business in Japan has been transformed by various changes in the business environment. One of the factors is the increase in personal assets in Japan. The total amount of personal assets has now exceeded 1,400 trillion yen (approximately US\$14 trillion), and this has boosted demand for customer asset management and investment services. Thanks to deregulation, banks have gained more freedom and flexibility in meeting customer demands. Due to these factors, the market is growing to an immense size and competition among banks in order to gain market share has become fierce. As a result, banks have been required to push forward with restructuring and consolidation, as well

“The biggest factors in the success of the project were the following: the teamwork as well as management-level information sharing between IBM and our company; the SOA-based package solutions and the excellent technical staff who supported them; and the reliable maintenance and operation system constructed by AMS (Application Management Service).”

— *Yoshikazu Tanaka, CEO, SBI Sumishin Net Bank*

An Internet bank is launched quickly through the use of the flexibility offered by SOA

Business Benefits

- A total of approximately 600 billion yen (approximately US\$6 billion) in funds was deposited and 400,000 new accounts were opened after only 18 months since the start of operations.
- The time required to launch the service was shorter than that required for the development of conventional financial products.
- By constructing a platform using SOA (service-oriented architecture), dramatic flexibility was achieved in adding new services.
- By using an SOA approach, the integration of applications and processes was simplified and development costs were substantially reduced.
- By adopting the framework approach, implementation risks were substantially reduced.

“Through 24-hour/365-day non-stop services, completely web-based transactions, and real-time services with flexible and advanced service-oriented systems, we have achieved great success after only about 18 months since starting operation, attracting funds totaling 600 billion yen and 400,000 accounts.”

– Yoshikazu Tanaka

as increase business efficiency. In addition, to maintain competitive advantage, they need to provide a more diverse product lineup for customers who are becoming more selective when choosing financial institutions.

The new dynamism of the Japanese financial sector has been demonstrated by the adoption of a new business model, the Internet bank—a concept new to Japan—which provides full banking services on the Internet in an attempt to capture market opportunities in the growing retail banking market.

The term “Internet bank” sounds similar to the Internet banking services offered by conventional banks; however, the operational style of an Internet bank is totally different in that it has no physical offices. With no physical offices, an Internet bank can offer attractive financial products while reducing costs and respond to new market opportunities more flexibly and effectively than other institutions using conventional banking models.

New business model, new challenges

Banks that employ an Internet-only business model face challenges in order to succeed in the Japanese banking market in spite of the prospects of high growth. The first challenge is to maintain low system costs—the bedrock of the Internet banking business model. This has proven to be a major issue for the relatively small number of Internet banks that have come into existence in Japan so far. They have had no other choice but to individually build high-level, proprietary—and expensive—systems. The second challenge is that because Internet banks have no physical offices, they have developed products and services centering on areas in which conventional banks that offer Internet banking have a competitive advantage—due to their ability to serve customers via both the Web and physical branches.

SBI Sumishin Net Bank (www.netbank.co.jp), a new entrant in the Internet banking industry in Japan, got the chance to differentiate itself in that market by choosing to provide full banking services on the Internet that differ from its competitors. The bank selected IBM Japan to design and build a new Internet banking platform. The solutions employed for the construction of SBI Sumishin Net Bank’s accounting system have enabled the opening of the first-ever Internet bank in Japan that provides full banking services, thanks to functionality that makes possible a wide range of products, services and packaged applications. The bank made the decision to take the SOA approach in its solution design, an approach which was essential to the project’s great success.

SBI Sumishin Net Bank’s original business plan demanded a wider range of services than Internet banks had previously provided to their customers, including asset management. SBI Sumishin Net Bank made use of its advantage as a newcomer, and employed a highly flexible system that was not limited by conventional

system design. This was obviously an advantage for SBI Sumishin Net Bank; however, from the viewpoint of constructing new solutions, from accounting functions such as loans, deposits and foreign exchange to the back-end systems on which they depend, there still remained issues concerning scope, complexity and other factors.

Entry into a highly competitive market and flexible systems construction

It was the demand for speed that further increased the difficulty of the project. With competitors preparing for entry into the market and fierce competition expected, SBI Sumishin Net Bank recognized that launching its service as quickly as possible was vital. Any delay in the development of this new net banking platform could result in the loss of SBI Sumishin Net Bank's ability to reach critical mass in the market and would have a direct influence on the rate of return of its business. Therefore, the top priority was the question of how to utilize and implement solutions throughout the process, from architectural design, to project management, to testing. This was a major reason why IBM Japan was selected by SBI Sumishin Net Bank. IBM Japan has a long track record in the banking industry. SBI Sumishin Net Bank judged the framework approach to banking solution development offered by IBM to be not only a method of lowering project risk but also a method of keeping costs low in the future by ensuring greater flexibility.

Completed on schedule by IBM Japan, the implementation of SBI Sumishin Net Bank's new Internet bank platform made full use of the IBM SOA-driven Rapid Enterprise Renovation for Financial Services Systems (RER for FSS) framework—a series of interlocked products and technologies targeted to all aspects of the bank's operations. The result is a robust mission-critical banking system running on J2EE™.

The main components of this packaged product include IBM DB2® and WebSphere® Application Server. In addition, Fidelity Information Services, an IBM Business Partner, was employed for the implementation of the accounting system functionality—which has allowed SBI Sumishin Net Bank to become the first-ever Internet bank in Japan with full banking services, successfully incorporating packaged applications into its accounting system.

A defining quality of the RER for FSS framework is the use of SOA to create flexible linkages across the bank's systems. With IBM WebSphere Enterprise Service Bus, the bank's front-end and back-end systems are connected by a service-oriented interface, while a safe and highly reliable electronic connection is provided between the banking business application and the system via IBM WebSphere MQ. IBM WebSphere Message Broker is also used for data transfer between banks, various path settings and data conversion.

Solution Components

Software

- IBM WebSphere® Application Server
- IBM WebSphere Enterprise Service Bus
- IBM WebSphere MQ
- IBM WebSphere Message Broker
- IBM DB2®
- IBM Tivoli® Monitoring
- IBM Tivoli Storage Manager
- Corebank (Fidelity Information Services)
- SAP R/3 FI/CO

Servers

- IBM Power® 570
- IBM Power 595

IBM Business Partner

- Fidelity Information Services
-

Smarter banking

During the construction of its business platform from scratch, SBI Sumishin Net Bank was the first Japanese bank to successfully introduce packaged products for its accounting applications. By combining a framework approach and industry-standard technology, SBI Sumishin Net Bank was able to start operating its system infrastructure in the Japanese banking market quickly in spite of the high level of difficulty of the project.



System management and storage management are performed by IBM Tivoli® Monitoring, IBM Tivoli Storage Manager and other IBM Tivoli products. The cluster architecture based on IBM Power Systems™, serving as the server platform, has achieved high levels of reliability and scalability.

Commencement of the Net Bank's operations

The building of the infrastructure for SBI Sumishin Net Bank progressed successfully at each stage. The fact that the bank's services were launched so quickly in spite of the project's high level of difficulty is testament to the strength of component-style development and the strength of the test methodology employed by IBM Japan. This also reflects the essential advantage of building a banking platform using an RER for FSS framework based on the SOA approach. The adoption of the SOA approach has simplified the integration of various business components and ensured high operational flexibility, which enabled the bank to add cost-effective new services more quickly to its lineup. These features are vital to an Internet banking strategy.

The short product development cycle has given SBI Sumishin Net Bank a real competitive advantage. The bank set a goal of opening 400 thousand accounts in its first three years; however, it accomplished this goal in just eighteen months. IBM Japan has provided operational support for this new banking business, and the stability and scalability of the IBM solutions has been demonstrated by the rapid expansion of the bank. "It is undoubtedly thanks to IBM Japan that we were able to start this business with a development period of only about 18 months," said Yoshikazu Tanaka, SBI Sumishin Net Bank's CEO. "It is important for us to continue to provide customer-oriented banking services to secure our position as the number-one Internet bank. We have great expectations for IBM as a partner with whom we pioneer new frontiers as well as being our navigator in the field of IT."

For more information

Contact your IBM sales representative or IBM Business Partner.

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State of Missouri Office of Homeland Security: Boosting disaster preparedness across the state

Overview

■ **Business Challenge**

To better prepare for future natural and man-made disasters and give first responders the ability to provide the speed and quality of emergency services that the public has a right to expect, the State of Missouri Office of Homeland Security needed to provide a new level of access to existing information and disaster management tools and resources.

■ **Solution**

IBM Global Technology Services worked with the state to design and implement the Missouri Emergency Resource & Information System (MERIS), a solution that makes diverse incident management systems, information systems, resources and databases accessible to first responders through an integrated, secure Web portal. MERIS also provides management and collaboration tools to make disaster response better coordinated, faster and more effective.



■ **Key Benefits**

- *Enables faster, better coordination of emergency response efforts*
- *Increases situational awareness*
- *Enhances emergency preparedness*

“[MERIS is] going to help us deal with disasters much more effectively than we ever could before.”

— *Paul Fennewald, director of Homeland Security, State of Missouri*

Business Benefits

- Enables faster, better coordination of emergency response efforts through immediate access to a broad palette of critical information
- Provides access to a statewide incident management system
- Increases situational awareness, giving first responders a clear understanding of emergencies
- Enhances emergency preparedness through greater collaboration and access to information
- Leverages existing capabilities by integrating systems already in place
- Provides an open platform for future expansion
- Avoids the use of proprietary technological solutions for access through Web enablement
- Simplifies access through a single sign-on and consistent Web interface

“We wanted MERIS to be a nearly transparent portal to access the good systems and resources we’ve already got. We didn’t want to replicate or duplicate any existing capabilities. Rather, we wanted to integrate with them.”

– David Finch, special assistant,
Missouri Department of
Homeland Security

Preparing for the “big one”

One day, Missouri may very well become the scene of a major natural disaster. It is the location of the New Madrid Fault, which in 1812 was the location of the largest earthquake ever recorded in the contiguous United States, a magnitude 8.0 temblor so severe that it caused the Mississippi river to run backwards in places. Like the more famous San Andreas Fault, a major quake along the New Madrid is overdue. When it happens, the impact will be almost unimaginable.

“There’s a potential for millions of people to be displaced,” says Paul Fennewald, director of Homeland Security for the State of Missouri. “We know a big quake is going to happen, we just don’t know when—and we need to be prepared to respond to it.”

When a disaster happens, rapid response saves lives. The faster and more coordinated emergency response efforts are, the more effective they can be. But with dozens of first responder agencies and multiple jurisdictions potentially involved, it becomes very difficult to manage the emergency in a cohesive manner.

During and after Hurricane Katrina, the nation learned first-hand how difficult it can be to provide the level of response, mitigation and recovery that the public has a right to expect. The populace should feel confident in the ability of emergency responders to handle any situation that arises—it’s important in maintaining peace of mind.

In 2006, driven by lessons learned from the response to Hurricane Katrina and well aware of the threat caused by the New Madrid Fault, the state of Missouri concluded that it needed to find a way of responding to emergencies more effectively, in order to save lives and mitigate damage. The New Madrid quake was chosen as the planning model, according to David Finch, special assistant, Missouri Department of Homeland Security, for good reason. “We knew that if we could develop an effective way to respond to a New Madrid quake, we’d certainly be able to handle a lesser emergency.”

Emergency information not getting to those who need it

Emergency managers across the U.S. already have access to a wide variety of information resources and incident management tools that help them respond to disasters. These resources range from police dispatch systems to existing Geographic Information Systems (GIS) infrastructure with terabytes of spatial data to hospitals and EMS status and much more. In addition, there are incident management systems—collaboration tools and reporting databases—that are used by incident commanders located in Emergency Operations Centers (EOCs) at the state and/or municipal level to maintain awareness of and control over the response to incidents in the field.

The difficulty from a statewide perspective is that these resources are not necessarily accessible to *all* emergency responders. This is a problem because, as was clearly demonstrated by both the 9/11 attacks and Hurricanes Katrina and Rita, while all disasters start locally, once they become severe enough they can impact a very wide area and require the involvement of emergency responders from hundreds or even thousands of miles away.

The issue is one of ready, rapid access to existing information across the entire first responder and emergency management community and even beyond. By providing a high level of access, response efforts can be better coordinated and faster, and therefore more effective. St. Louis officials recognized this challenge and created a Virtual Emergency Operations Center (VEOC) under the aegis of the St. Louis Area Rapid Response System (STARRS), a collaborative effort of several municipalities and counties in the St. Louis area. The VEOC provides comprehensive incident management capability and access to all the information needed for disaster response from agencies such as the police, fire, EMS, military, DOT and even the private sector, throughout the St. Louis region.

The efforts of STARRS provided the impetus for a statewide initiative to provide similar capabilities across Missouri. MERIS is similar in concept to the STARRS' VEOC, which also utilizes IBM WebSphere collaboration tools and NC4's E Team Incident Management software. It is designed to provide near real-time situational awareness and synchronization of emergency response statewide. But the system has to meet other important goals as well. "When we conceived of MERIS," David Finch says, "we had some very clear goals in mind. First, we wanted to have a secure, robust platform that anyone with access to the Internet and the proper authorization could use. Second, it had to be open and expandable, to meet future needs. And last but certainly not least, we didn't want to saddle anyone with yet another system that they'd have to train on and support. We wanted it to be a nearly transparent portal to the systems and resources we've already got. We didn't want to replicate or duplicate any existing capabilities. Rather, we wanted to integrate with them."

Doing business in a new way

With so many different resources owned by so many different organizations, alignment and optimization of business processes was a critical part of MERIS development. This is where IBM came in. "The first step was for IBM to help us transform our existing business processes," Finch says. "In order for the system to work, we had to create clearly defined processes and protocols that would enable our users to transparently access any existing or future information system, all from a single, integrated user interface accessed by a single sign-on, using only a Web connection." IBM also acted as project manager, coordinating the activities of the

Key Components

Software

- IBM DB2®
- IBM Lotus® Sametime®
- IBM WebSphere® Application Server
- IBM WebSphere Portal
- E Team online management tool
- NC4 E Team Incident Management application
- SafePlans Emergency Response Information Portal (ERIP)
- VirtualAgility OPS Center™
- VirtualAgility WorkCenter™

Services

- IBM Global Technology Services

Business Partners

- NC4 Professional Services
 - VirtualAgility
-

Why it matters

The State of Missouri Office of Homeland Security needed to give first responders and emergency managers a new level of access to information resources, in order to make emergency response efforts faster and more effective. Working with IBM and its partner NC4, the state deployed MERIS, a platform that provides simple, integrated, Web-based access to a wide variety of existing resources and systems along with collaboration tools to authorized personnel across the state. This gives emergency managers an unprecedented level of capability for dealing with both natural and man-made disasters, enabling them to deliver the quality of response that the public has a right to expect.

subcontractors that did the actual development of MERIS, as well as providing the WebSphere Portal software platform on which it is deployed. MERIS is based at the Missouri state EOC, which is located in a hardened facility with multiple physical and logical inputs and outputs to help ensure that it stays on-line during an emergency. There's also a remotely located back-up site. "It's important to understand, though, that this isn't a monolithic system," says Finch. "All we're doing is integrating existing systems located at various locations. Even if we go down completely, it won't affect those systems...nor would a failure of one of them affect us."

MERIS rests on key IBM middleware including WebSphere Portal Server, WebSphere Application Server and DB2 database software. Running on this platform is a core application, the VirtualAgility OPS Center, which integrates MERIS' other components and provides a single sign-on capability with secure identity management. These components include the VirtualAgility WorkCenter and Safeplans ERIP planning solutions; an enhanced version of the E Team online incident management tool; and Lotus Sametime for sharing information and communicating. The platform also offers Web conferencing, chat, e-mail and whiteboarding, as well as providing an incident mapping capability. This integrated portal solution positions the state to seamlessly add future functionality.

MERIS extends beyond the boundaries of the emergency management community. It can also make the private sector part of the picture, by opening up new channels for information exchange. For example, first responders could potentially find out about hazardous cargo on a derailed train by tapping information from the rail carrier, or learn what supplies might be available locally at warehouses and stores to help with emergency relief.

It's all about the mission

The integration of emergency systems is powerful because it extends existing capabilities in a new way, and to new users. "A lot of our emergency personnel across the state have never had access to this kind of information or these kinds of emergency management tools before," says Paul Fennewald. "That's important. The systems have proven themselves time and again...they work. Now, for the first time, we're giving those tools to everyone who can benefit from them. That's going to make us all safer, and it's going to help us deal with disasters much more effectively than we ever could before."

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State tax agency enables paperless filing with SOA.

*Using SOA to bring customer satisfaction and
efficiency to new heights*

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Introduction

This DeepView case study describes how a state government tax agency improved the quality and diversity of services it provides to its customers – state taxpayers – through the use of Service Oriented Architecture (SOA). The agency implemented a Web-based tax-processing application, accessible to taxpayers, tax preparers and agency users alike, which brought it in step with users’ expectations and increased the efficiency of its internal operations. Deploying IBM WebSphere® Process Server to link back-end applications on the mainframe with dynamic data from the front end enabled the agency to employ transaction processing – increasing the system’s speed, accuracy and reliability.

Mired in manual processes and application silos

The agency processes more than \$75 billion annually in personal income tax, sales tax, property tax and business taxes. Taxpayer information for each of these tax types was processed and housed in separate, highly specific applications. The disparate mainframe-based, batch-oriented applications did not share data or have a common data store, nor did they use consistent models for storing information about individual taxpayers. Further, none of these siloed applications was accessible via the Internet.

From an agency standpoint, use of multiple systems was cumbersome and inefficient, primarily because of the duplication of effort that it required. It was also quite costly to maintain and make updates to them – updates that were necessary on a regular basis due to frequent changes to the tax code.

From the point of view of taxpayers, the application structure made contacting the tax agency frustrating and time-consuming because they had to deal with different divisions for issues regarding the different tax categories. What’s more, they could only contact the agency by phone or through the mail – and the only way to file taxes was by completing and submitting paper forms. These forms also contained excerpts from the tax code, which was otherwise largely inaccessible to the public. With the proliferation of streamlined, customizable Web access to organizations and services of all kinds, taxpayers were becoming increasingly dissatisfied with the agency’s outdated system.

Solution components

Software

- IBM DB2® pureXML™
- IBM Lotus® Forms
- IBM Rational® Application Developer
- IBM Rational ClearCase®
- IBM WebSphere® Application Server
- IBM WebSphere Business Monitor
- IBM WebSphere Commerce Server
- IBM WebSphere Integration Developer
- IBM WebSphere MQ
- IBM WebSphere Process Server

Hardware platform

- IBM AIX® operating system software
- IBM pSeries® servers

Its inability to provide taxpayers with online filing capabilities was a significant factor driving the agency's SOA initiative.

The agency wanted a solution that would enable it to both leverage the valuable data and resources in its disparate legacy systems and present a common interface to its internal and external users.

The agency realized that it needed to enhance the customer service it provided to taxpayers so it could erase its reputation for being difficult to deal with. It determined that one way to become more accessible and user friendly was to make it easier for taxpayers to file their state income tax and otherwise comply with appropriate state laws. For all of these reasons, the tax agency launched an initiative to modernize and integrate its tax systems, eventually enabling taxpayers to file their taxes online.

Taking early steps toward a services-based approach

It was apparent that the agency would have to radically overhaul its existing systems to achieve its customer service goals. As transaction volumes were increasing, so were the applications' breaking points—both in number and in scope. Another issue was that the agency's in-house COBOL expertise was dwindling as more of its traditional COBOL developers reached retirement.

Yet it did not want to replace the systems wholesale. Despite their disparities and inefficiencies, these siloed systems still worked. Not only did they contain enormous amounts of data, they also represented significant intellectual capital and knowledge. The alternative was to introduce new approaches while still exploiting the existing legacy systems.

In the 1990s, the tax agency had implemented what amounted to an SOA approach. Instead of repeatedly writing the same routine, such as “get name and address,” in all of its different individual systems, it chose to write COBOL sub-routines for selected functions once, then placed them in a common library that each system could access. The tax agency's architects and developers had extracted, over time, the core business logic out of the complex older COBOL programs. It had created what we would think of today as services that could invoke the necessary business logic.

These services made it possible for the agency to change operating systems, vendors and database systems without having to change the application functions. For example, the original name and lookup referenced above was in an IDMS data store. When it later became an IBM DB2® database name and lookup, the application didn't change at all because it simply continued to call the same business component.

Highlights

COBOL sub-routines for selected functions were already in use across the agency's siloed systems.

Core business logic for these common functions remained unchanged over time, even as operating systems, vendors and database systems were replaced.

Over the next 10 years, the tax agency developed a wealth of business components in COBOL. These became the bedrock of the tax agency's computing and the basis for its more formal adoption of SOA, described in this DeepView. And in creating these business components, the agency effectively introduced standards that could be implemented across its IT systems. For example, it built standard error handling, passing data to and from the business component. This could as easily be implemented to run in batches as to run online – such as in IBM CICS®.

Using SOA to enable customer access and enhance public image

The agency's early successes in adopting the use of business components gave it an advantage when the time came to integrate and modernize its applications to enable customer access and online filing of tax returns.

Although it solicited vendor bids for the development of the new system, the agency ultimately decided that it was in the best position to build the system itself: after all, it had intimate knowledge of the business components already in place, and it simply didn't make sense to re-architect what was already working.

For its modernization project, the agency chose to adopt IBM principles and technology – in effect making SOA its de facto choice. This gave the agency flexibility to revise its approach in response to changes in technology.

The tax agency's original plan and initial phases of the modernization project had been to move all of its applications from its existing Unisys mainframe to an IBM mainframe (Figure 1). Although it did deploy the planned IBM mainframe for its back-end applications, the agency determined that it would be more practical to move certain mission-critical applications to an IBM pSeries® server running on the IBM AIX® platform.

Highlights

Its extensive experience with business components prepared the tax agency for building a new system based on SOA principles.

The agency chose to employ transaction processing for its income tax-processing application, although other components still undergo batch processing.

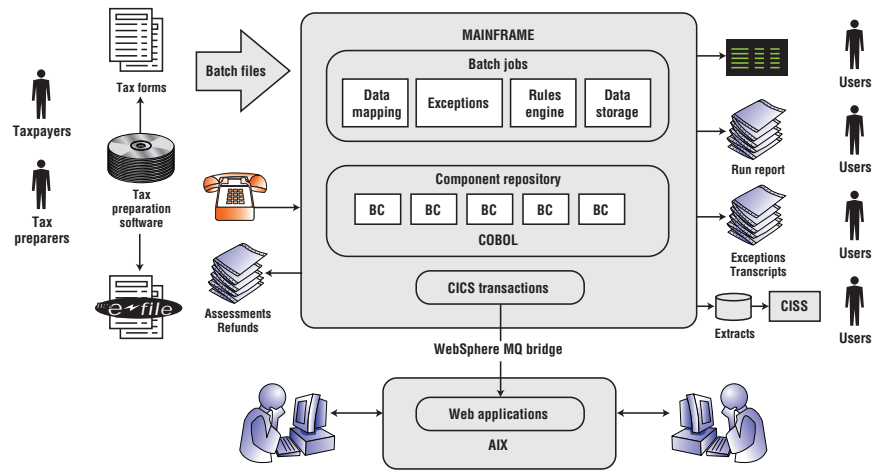


Figure 1. This chart depicts the solution for the initial phases of the modernization project.

In particular, the agency wanted to employ transactional processing rather than batch processing for the core applications that calculate and process income tax returns. This change was made possible by the combination of a disciplined SOA approach and using IBM WebSphere Process Server, which links and coordinates the business components into an overall business process for processing a tax return (Figure 2).

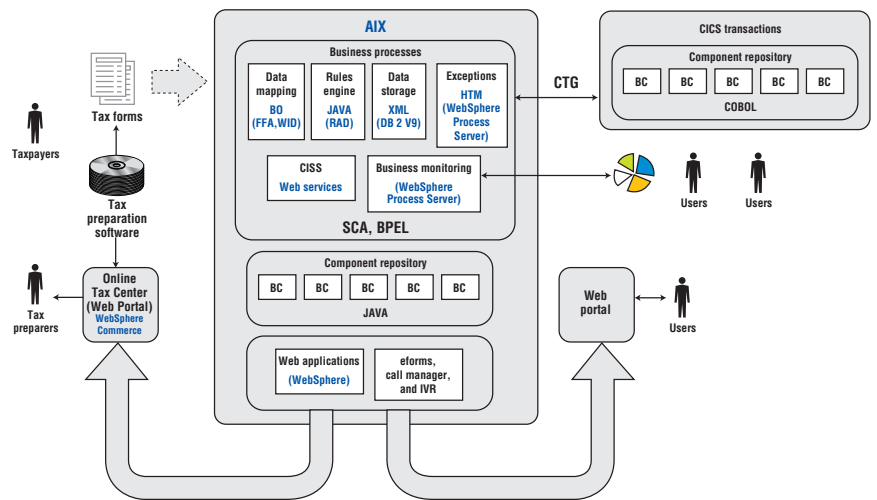


Figure 2. Later phases of the modernization project resulted in an improved transactional solution.

Highlights

Using a range of tools, including IBM Rational Application Developer and IBM WebSphere Integration Developer, the agency was able to create a new component-based set of processes.

Traditional paper forms are scanned and the data is converted to XML format. Using the XML data, the business process first checks to see if the taxpayer is known, checks the validity of the filing (such as checking whether all of the forms necessary to process the return have been submitted), calculates the return, checks to see if any business errors occurred as a result, stores the processed return and then feeds information to the back-end systems so that these can continue the downstream processing. Another key feature of the new system is the storing of transactional tax return data in native XML format which enables further processing capabilities. The agency is extending this approach to manage or issue bills or warrants or whatever is needed from a case-management perspective.

With this SOA strategy, the tax agency was able to keep key COBOL business components running on the mainframe to continue to perform processing when necessary, but moved them to CICS so they could be invoked from the business process running on IBM WebSphere Process Server (Figure 3). Other back-end systems that remain on the mainframe include such functions as accounting, general ledger, case management and compliance. At the time of this writing, the agency's plan is to keep these applications on the mainframe for at least two more years while migrating them to IBM WebSphere Process Server running on the AIX platform.

The agency did, however, convert many other COBOL programs into Java™, running them on the AIX platform and orchestrating the whole as business transactions through WebSphere Process Server. Other important features that come with business process management, such as monitoring and dashboard provision, were layered on top.

The nuts and bolts of modernizing

The agency used a variety of tools in converting its COBOL code to Java. IBM Rational® Application Developer software was the key tool for developing pure applications. Versions of source code were managed by IBM Rational ClearCase®. Following a service component architecture approach, the tax

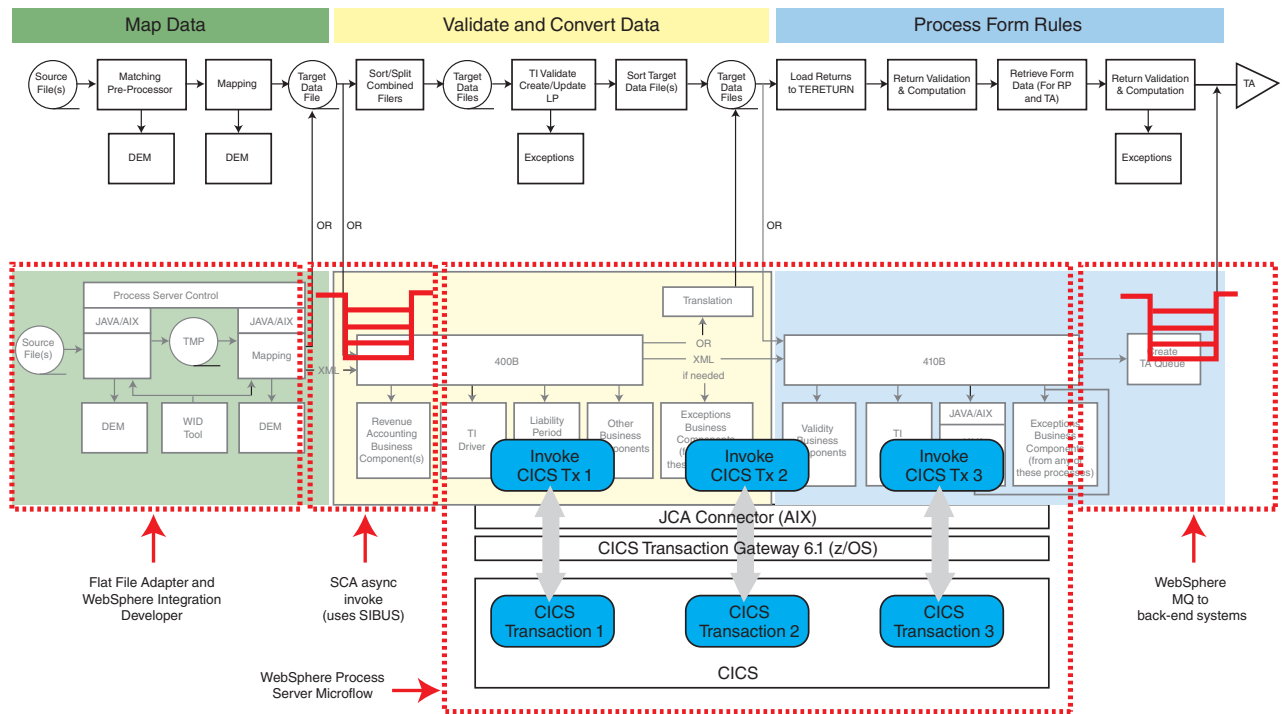


Figure 3. The lengthy COBOL process for validating taxpayer data is greatly simplified with WebSphere Process Server.

agency used IBM WebSphere Integration Developer to assemble components into business processes and to create the modules that run on WebSphere Process Server.

The tax agency also invented some of its own tooling. It was innovative in how it displayed Java Server Pages (JSPs) and how it permitted users to customize what they needed into “tab sets”—writing its own frameworks and tools to expedite progress. Converting COBOL business components to Java involved mostly recoding. Although no real tools existed to provide in-depth automation, much of the COBOL was already in a service-based structure because the data and user interfaces had previously been separated, which made recoding comparatively straightforward.

Highlights

Enabling users to file their taxes online is a primary goal of the agency's SOA undertaking.

Electronic duplicates of paper forms are populated with XML-based data captured during tax return processing and displayed onscreen.

A tax form makeover: from green screen to dynamic data and processing

Prior to the tax agency's adoption of SOA, taxpayers were limited to filing their taxes using traditional paper forms. To further its primary goal of improving customer relationships – and its own reputation – the agency is converting these forms into electronic format and enabling taxpayers and tax preparers to file them via a Web Interface. Agency users such as Call Center agents would also utilize a Web interface that was consistent with the taxpayers' interface – a significant advance over the text-based green-screen interface (using IBM 3270 protocol and terminals) that had long been in place in the agency.

In order to digitize the process of filing tax forms – and transfer the entered data directly to the agency's new income tax processing system – the agency is using IBM Lotus® Forms to create electronic forms that precisely match the paper forms. The first step in this new approach is take the XML-based transactional data captured during income tax return processing and make it available as a series of forms within the agency worker's tabbed screens to facilitate their work.

The agency is preparing to post the forms on the Web so that taxpayers and tax preparers can submit their tax data into the new system, reducing errors and resulting in quicker tax return checks. The Web interface that will enable end users to interact directly with relevant tax data was also built using Lotus Forms. Lotus Forms takes XML data and represents it in high fidelity on the screen so that it looks just like the paper form taxpayers are used to seeing (Figure 4).

Highlights

```

<USAddress>
- <Address>
  <AddressLine1> PO Box 228 </AddressLine1>
  <City> ANYTOWN</City>
  <State> ANYSTATE</State>
  <ZIPCode>00000-0000</ZIPCode>
</USAddress>
</StateOfIncorporation>
<HdrCode>
- <FederalReturnFiledOther>String</FederalReturnFiledOther>
  <FilerClassificationCode>AA3</FilerClassificationCos>
  <FormType>CT5</FormType>
  <ReturnTypeCode>CT5</ReturnTypeCode>
  <SoftwareDeveloper>
  <DeveloperName>
>BusinessNameLine1>Sunrise Investments Inc</BusinessNameLine1>
<BusinessNameLine2>A A</BusinessNameLine2>

```

Figure 4. XML-based tax data maps directly to XML-based electronic forms.

Once the agency created the electronic forms for internal users, it was but a small service step to make them available to external users. This is where the real value of SOA lies. The tax agency is reusing the XML, forms, business components and business processes to enable both internal and external use of the actual online tax forms. The result is that services have finally provided a literal electronic “forms-based” system. Taxpayers, tax preparers and the tax agency’s own staff can see exactly what somebody has typed into the form, either electronically or on paper.

With SOA and XML, the agency can present a common tax-form interface to internal and external users.

Making changes to tax forms, historically a very time-consuming process, can now be completed quickly and efficiently with Lotus Forms and XML.

This functionality is now supported in XML and stored in DB2 pureXML™ software—an architecture that offers significant benefits. The tax agency can process hundreds of thousands of tax returns daily because it is no longer necessary to keep translating to and from COBOL copybooks.

A further benefit is that XML is easy to change. This matters. Every year, tax forms change due to legislation. In the “old days,” developers would have to go into DB2 to change all the tables (one table per form), and into all the COBOL application code to change the copybooks. The process was tedious and very time-consuming. Now, with Lotus Forms and XML, the changes can be completed in a matter of days because everything is stored as a document.

Highlights

Using Lotus Forms, pureXML and WebSphere Process Server together has led to further SOA-based innovation by the agency. Instead of writing separate, standalone Lotus Forms applications, individual electronic forms pages along with their corresponding XML document are reused and inserted into a business process controlled by WebSphere Process Server. The focus has shifted from delivering an electronic form to delivering a business process to users.

Helping to protect confidential taxpayer data with IBM WebSphere Commerce Server
Since a principle of modernization was to extend its applications to taxpayers, tax preparers and other agencies over the Web, the agency needed to ensure that its new service-oriented structure would provide secure, authenticated access. After evaluating various options to achieve this goal, the agency opted to employ IBM WebSphere Commerce Server software. Rather than offering products for purchase – the typical function of a commerce server – the agency would instead offer a “catalog” of business processes from which taxpayers, tax preparers and other agencies could choose. WebSphere Commerce Server provides robust authentication, role-based access and security-rich transaction capabilities, so the agency – and its users – could feel confident that taxpayer information was protected.

The authentication features of WebSphere Commerce Server make it easy to delegate organization-specific authentication rules, while helping to protect taxpayers' information.

An additional benefit of WebSphere Commerce Server is that it also allows the delegation of organization-specific authentication rules. Instead of having to manage multiple user IDs and passwords for third-party system users – H&R Block, for example – the tax agency could delegate to those organizations the authority to access certain applications and to manage their employees' user IDs and passwords themselves. Through this delegation capability, the tax agency has been able to conserve resources that would otherwise be allocated to authentication management.

Highlights

The agency's new system demonstrates many of the benefits of WebSphere Process Server: improved accuracy, increased efficiency and enhanced interoperability.

The creation of business components for executing business logic is perhaps the most notable best practice in SOA implementation, primarily because it enables swift SOA adoption.

Opening the door to increased efficiency and accuracy with IBM WebSphere Process Server

Moving the agency's tax-processing application to WebSphere Process Server has done more than simply replace batch processing with transaction processing: it has opened up all-new integration points that can be delivered through new channels. By converting its COBOL-based tax-calculation business rules to Java, the tax agency expects to move that processing into the hands of business partners – something that had been impossible with the old system. This will enable vendors to license the tax agency's rules and the tax code so that taxpayers can complete and file their tax returns with desktop software that uses the calculations provided by the tax agency.

This is definitely a win-win situation for all parties: taxpayers will be able to prepare their tax returns more easily and quickly, with a higher degree of accuracy. Because the tax software interfaces directly with the agency's system, software vendors will be able to update their products quickly when the tax code changes, potentially enhancing their competitive position or leading to increased revenue. Third-party tax-preparation specialists, such as accountants, can prepare their clients' tax returns more quickly, with a high degree of confidence that the return is accurate and in compliance with the most current tax regulations. And, finally, the tax agency receives fewer faulty returns, so the number of business exceptions that it must process is reduced.

SOA best practices and lessons learned

In one sense, Service Oriented Architecture is itself the most significant best practice in IT development today. It has proved to be efficient and extremely flexible, and it is the foundation for a whole host of operational and execution benefits. Within the discipline, the creation of business components for executing business logic is perhaps the most notable best practice in SOA implementation, primarily because it enables swift SOA adoption. The tax agency became well acquainted with this principle and its value early in its modernization – before it had even heard of Service Oriented Architecture.

Highlights

Use of XML and Web services can enable information exchange and interoperability between disparate systems.

SOA is no exception to the rule that stresses the importance of having the right resources with the right skills for the project.

Key to the success of an SOA implementation is the use of standards when developing business components. Standards enable application-specific business objects to be converted into generic business objects, thereby increasing the system's flexibility immeasurably.

Through its development efforts, the tax agency recognized that it is essential to accurately identify and categorize different application functions so as to "place" them in the correct layer. For example, change auditing and logging do not necessarily represent business functionality; they often belong in the framework layer instead of the business component layer. Investing in rich frameworks—in effect, infrastructure services—becomes more and more important for enabling good business practices and processes.

And finally, adopting XML is a best practice in instances where data will be coming from, or interchanged with, external systems. It is an important enabler of interoperability. In the case of the tax agency, the use of XML allowed it to exchange information with the IRS, receiving XML objects or documents via Web services. Having a common language was key.

As for lessons learned throughout the project, it didn't take the agency long to appreciate how critical it is to choose a vendor with the expertise to provide necessary project support. The agency developed a strong relationship with IBM, relying on IBM's expertise to help reduce the project's risk factors. Indeed, IBM provided more than consultative expertise; it devoted full-time staff who were responsible for managing project delivery, including finding necessary resources for each step.

Another critical lesson for the agency was about the importance of hiring the right resources with the right skills for the project. This is particularly true for SOA because of the newness of the technology. Without the appropriate resources, it is easy to repeat the costly mistakes that others have learned to avoid.

Highlights

The agency's SOA project provided a good opportunity for its COBOL and Java developers to work together and share their expertise.

The tax agency also learned that when implementing new technologies, it's important to provide consistent training across your IT team. In this way, different "generations" of programmers can develop a common frame of reference and can share their expertise, each benefiting from the other's experience and insight. While new developers coming out of college are fluent in tools like Java, older developers are less so, having worked with tools such as COBOL for years. And because this project relied equally on both kinds of technology, and will continue to do so for some time, having as broad and deep a skill set as possible was a necessity.

Successfully building or updating a new IT system requires organizations to stay flexible and able to adapt to shifting parameters, and to be willing and able to make changes midstream in response to evolving technology. This was a lesson that the tax agency learned early on. When conditions required changing from batch processing to transaction processing, for example, the agency's sound approach and the flexible framework afforded by SOA made the change go much more smoothly.

Exceeding expectations: long-term and day-to-day benefits of SOA

Ironically, with its early adoption of SOA-like principles more than a decade ago, this tax agency started down the path of what has now become an IT best practice. In retrospect, the agency's approach seems remarkably prescient. Its choice to adopt this innovative approach created opportunities for it to introduce new services, and new channels for delivering them, both to agency users and to its customers (taxpayers and tax preparers).

The ability to retain legacy IT investments in an SOA implementation is indicative of the platform's flexibility.

Specifically, its use of DB2 pureXML, Lotus Forms and WebSphere Process Server, backed by services, marked a major advance in the efficiency, quality and timeliness of the services the agency offers its external constituents; it also resulted in greater accuracy and increased productivity internally. What made this possible was disciplined adherence to services and SOA principles.

The ability to implement system changes in phases is just one of the benefits of using a service-oriented approach.

Highlights

Transaction-based processing provides greater accuracy than batch processing; it also enables faster failure resolution.

At the same time, the flexibility inherent in SOA has enabled the agency to continue reaping value from its legacy investments, which remain an integral part of its overall system. As a result of SOA's flexibility, rooted in its use of business components, the agency has been able to implement its system changes in phases—and even to make a fundamental system change, from Unisys to the AIX platform. Further, the agency is perfectly situated to make future enhancements with little disruption.

The largest benefit the tax agency has experienced so far is a reduction in its processing costs, which can be attributed to moving its core processing functions off the mainframe to other platforms, such as WebSphere Process Server. While it is true that this cost reduction is partly a function of the cost of the hardware in use, it wouldn't have been possible to reduce the amount of processing taking place on the mainframe if the SOA environment had not been implemented.

The move away from batch processing to the transaction-based paradigm has meant that there will be fewer errors, and they will be caught earlier. The tax agency has already seen greater accuracy, and it can deal with failures or business exceptions at the individual transaction level as opposed to whole batches. In the past, if a batch contained bad errors, the agency had to recheck the whole batch—and then go back to the banks that originated those batch files to tell them to fix them (which could take days). In contrast, the new transaction-based approach provides faster turnaround and better service to taxpayers and tax preparers.

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IBM ILOG helps Südzucker meet seed distribution and regulatory compliance needs

Overview

Südzucker A.G. is an international organization that processes agricultural raw materials to produce safe and high-quality products, particularly foodstuffs for the food processing industry and consumers. The company leads the market with a wide range of sugar products for home and commercial use. It also participates in related segments of the food industry, such as frozen food and fruit-juice concentrates.



■ **Business need:**

One of Südzucker's primary operations is the distribution of sugar beet seeds to farmers. Government regulations require the seeds to be traceable back to their point of origin. To comply with these regulations and ensure the safe distribution of the seeds, the company needed a planning and scheduling solution designed to assemble each shipment from the fewest number of seed batches.

■ **Solution:**

To minimize the number of batches used to fill a shipment, Südzucker created the Seed Batch Distribution System (SBDS). It uses a mathematical model built and maintained with IBM® ILOG OPL Development Studio to capture the constraints of the problem—more than 10 warehouses and 20 seed types—to optimally fill the shipments necessary to satisfy thousands of orders from more than 20,000 farmers annually using an

application based on IBM ILOG CPLEX, the market-leading mathematical programming technology.

■ **Benefits:**

Deployed in 2003, SBDS has been highly successful in helping Südzucker to meet government regulations and helps provide:

- *Full regulatory compliance*
- *Less batch splitting*
- *Accurate order fulfillment*

Just about anyone with a sweet tooth in Europe has probably eaten sugar from Südzucker. In addition to the traditional sugar segment, in which Südzucker is the market leader in Europe, a dynamically growing special products segment has been built up, incorporating functional food (Beneo-Palatinit/Beneo-Orafti), starch, portion pack items, bakery additives, deep-frozen products (pizzas), fruit additives and fruit-juice concentrates, and bioethanol. The group's strategic objectives are to stay on a steady path of profitability while maintaining a sound balance sheet and financial structures. Südzucker concentrates on those activities in which it has a competitive advantage due to its existing core competencies. The group's significant strengths include a close connection to agriculture, know-how in the sugar area and innovative power supported by its internal research infrastructure. Those new business activities which have been set up in parallel with the sugar segment have an affinity to the core business, enabling business risks to be kept within reasonable limits.

Challenge

To comply with governmental traceability regulations and ensure the safe distribution of the seeds, Südzucker needed a planning and scheduling solution designed to

assemble each shipment from the fewest number of seed batches. For each type of seed in a Südzucker warehouse, there can be several different batches, each with a different quantity of seeds. Ideally, only one batch should be used with each shipment, but this isn't always possible.

Solution

The Seed Batch Distribution System uses a mathematical model built with IBM ILOG OPL Development Studio and run with IBM ILOG CPLEX. As data is entered for shipments, the application creates a solution that matches warehouse stock to the quantities requested. When only one seed batch per seed type is available at a warehouse, the solution is very simple. But when the application has to process multiple batches per seed type, the application has to find the best possible solution for minimizing the number of batches used to fill the individual shipments. With literally hundreds of batches, the complexity of this problem mounts quickly. The SBDS mathematical model applies data for the warehouses and the seed batches to efficiently and accurately fill each shipment with the fewest batches. This makes tracing the seeds back to their origin easier should an issue arise concerning the seeds.



“We’ve had nothing but success with IBM ILOG OPL Development Studio. It lets us develop fast and deliver excellent customer support. No doubt we made the right decision in going with IBM ILOG.”

-- Steffen Lukesch, Manager Business Process Development, Südzucker A.G.

Products and services used

Software

IBM® ILOG CPLEX

IBM® ILOG OPL Development Studio

Benefits

With IBM ILOG OPL Development Studio, Südzucker's experienced Operations Research developers were able to go from problem identification to finished application in less than 15 man-days. It took them less than five man-days to do the mathematical modeling, including all the revision steps. IBM ILOG CPLEX is the fastest

MP engine on the market, and IBM ILOG OPL Development Studio was specifically designed to work with this engine. Combined, they result in powerful, robust solutions like the Südzucker implementation. The company now achieves a much higher level of safety for better ensuring the traceability of its seeds.



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WSC14128-USEN-01

Telstra: Changing the way procurement works

Overview

■ **Business Challenge**

Telstra, the premier telecommunications company in Australia, sought to support its strategic corporate transformation plan by streamlining and simplifying internal processes and systems. In addition, the company sought to reduce the cost of running the business.

■ **Solution**

Telstra teamed with IBM on a seven-year, multi-phase project to transform and outsource its procurement processes, leveraging IBM procurement infrastructure investments and supplier relationships to gain greater control, visibility, responsiveness and internal compliance, as well as save hundreds of millions of dollars.

■ **Key Benefits**

- *On track to save A\$700 million over seven-year period*
- *Improves internal compliance*
- *Enables Telstra to maintain control over key supplier relationships while leveraging IBM buying power for general procurement*
- *Standardizes procurement across the entire enterprise*



When a company grows to the size of Telstra, Australia’s leading telecommunications provider, the efficiency of internal operations becomes a major consideration. Core functions are of such a massive scale that they almost become significant operations in their own right.

For example, for Telstra to provide a complete range of services including fixed lines, Internet, and mobile service, it requires over 500 employees working in procurement operations and related services alone. Procurement accounts for around A\$11 billion annually, and

involves around 8,000 suppliers across 46 different commodity families—everything from ordinary office supplies to mission-critical network hardware.

Beyond direct cost savings, Telstra has another compelling reason to pay close attention to optimizing its operations: greater competitiveness in a dynamic and unpredictable market. In late 2005, the company instituted an end-to-end corporate transformation strategy designed to give its customers a truly seamless user experience across all devices and platforms. To support this strategy, the company’s leadership

Saving millions through greater procurement control

Business Benefits

- Achieved procurement savings of A\$355 million over two years (FY '07 and '08). Savings are, in large part, due to Telstra's new approach to procurement, including its supply chain activity with IBM
- On track to save a total of A\$700 million over the course of the seven-year supply chain contract with IBM
- Leverages proven; effective IBM procurement processes and automation technology
- Improves internal compliance, giving greater visibility to spending; ensures procurement is correctly engaged in all purchasing activities and that the right vendors are used to obtain the best available prices
- Reduces cycle times for vendor payment processing
- Enables Telstra to keep control over key supplier relationships while leveraging IBM buying power for general procurement
- Standardizes procurement across the entire enterprise, increasing efficiency and consistency

knew that they would have to change the way it does business and gain greater control over internal processes—including its procurement supply chain—to provide critically needed efficiencies, as well as more accurate information about the true state of the company to support planning and decision making.

It had become increasingly apparent that the internal workings of the company were going to directly impact its competitiveness. According to Ian Wheatley, executive director for Telstra procurement, “Our supply chain was once seen as just a back-office function, but is now a competitive advantage.” With this realization came the impetus for the end-to-end transformation of Telstra's procurement processes. The company saw that it could not only save millions, but also put itself in a much stronger competitive position by improving its business responsiveness.

Challenges to be overcome in the procurement process

Like most large enterprises, Telstra's internal processes for procurement worked, but were not necessarily optimal. Different business units within the company were doing their procurement independently, and employees could procure goods and services in many ways. Telstra did not have a single view of all of its supplier activity and annual spending.

Many different vendors were supplying the same goods and services to the company, often at different prices. Although a purchase order process was utilized that provided a degree of monitoring and compliance with procurement policies, compliance was not as good as it could have been. In reality, only 50 percent of the total spending went through that existing process, with the rest managed by paper-based, manual processes—the result being no true end-to-end visibility or accountability and no reliable way to determine if suppliers were delivering the promised goods at the promised prices.

This situation not only hampered Telstra's ability to get new projects and services off the ground quickly, it also posed unnecessary challenges to vendors because of inefficient manual and paper-based processes that led to slower payments.

Telstra knew it was time to create—and enforce—a single, standardized procurement process and platform to connect to suppliers, and optimize its inventory, spare parts management and logistics operations to drive down costs while boosting responsiveness and efficiency. Only in this way would the company be able to support its overall transformation strategy.

Partnership was the best option

After examining the feasibility, cost and effectiveness of developing and instituting an entirely new procurement capability—complete with a new supporting IT infrastructure—in-house, Telstra turned to IBM.

“Our supply chain was once seen as just a back-office function, but is now a competitive advantage.”

— Ian Wheatley, executive director for Telstra procurement

IBM has implemented a robust, automated procurement system for its own global operations. This transformation has a strong track record, saving the company some US\$20 billion over three years. Telstra realized it could leverage the work done by IBM by engaging the company as a strategic supply chain partner. By outsourcing its procurement processing to IBM, Telstra would be able to quickly implement a proven, effective solution appropriate for a large company without the need for customization.

In September 2006, a seven-year phased project was announced. In Phase I, the procurement infrastructure would be put in place and new, end-to-end procurement processes instituted. Phase II, which started in late 2007, is the truly significant part of the project from a business standpoint, says Ian Wheatley. "In Phase II, IBM will provide a single, end-to-end view of our inventory supply chain and enable us to deliver the right part, to the right place, at the right time—improving customer service and reducing costs. This is great news for our customers and shareholders." A third phase of the project, which introduces demand and supply chain planning to fully optimize operations, is planned.

It was a bold, ground-breaking move; Telstra is among the first telecommunications companies anywhere to undertake such a transformation with such speed, and the collaboration is the largest IBM procurement outsourcing relationship in the world. It is also notable for its comprehensiveness; many companies only address one aspect of procurement transformation. Telstra has completely transformed the process, company-wide, enabling true standardization, consistency and much easier integration with existing IT systems and business processes.

A robust, outsourced solution

The IBM Phase I solution is multifaceted and goes beyond procurement processing. Based on the IBM Source-to-Pay offering, it handles transactional processing for all of Telstra and its thousands of suppliers. It also provides single-view visibility and accountability for the entire procurement process, enabling Telstra to make realistic and actionable business forecasts.

By implementing a single, end-to-end, comprehensive platform for all of Telstra's procurement, many of the challenges the company faced have been fully addressed. There is now a single process to procure, and only one set of vendor relationships to consider. Procurement has thus been made much simpler and easier to manage for the company. Procurement policy compliance rates have already risen from less than 50 percent to almost 70 percent. By the end of the program Telstra aims to have compliance rates in excess of 80 percent.

Solution Components

Services

- IBM Managed Business Process Services
- IBM Source-to-Pay

Smarter procurement control

To both support its company-wide business transformation strategy and save millions, Telstra teamed with IBM to institute an end-to-end outsourced procurement system that leverages IBM Integrated Supply Chain capabilities, buying power and supplier relationships, while keeping control over key strategic vendors in Telstra's hands.



Sharing responsibility

An important element of the relationship from a strategic point of view is how procurement responsibilities are divided between Telstra and the IBM Integrated Supply Chain organization. In procurement, there are two kinds of spending: direct and indirect. Indirect spending is general in nature, and covers those goods and services that all companies need, from office supplies to furniture to cleaning services and the like. Direct spending is specific to the company, and of strategic importance. In Telstra's case, it covers mission-critical items like network hardware.

The relationship between Telstra and IBM serves Telstra's strategic needs and works to its advantage by keeping the control over critical direct-spending supplier relationships in Telstra's hands, while handing responsibility for indirect spending over to IBM. This enables Telstra to take advantage of IBM's vendor relationships and buying power.

While Telstra retains control over key supplier contracts, those vendors remain plugged into the procurement platform, thereby maintaining the integrity of the end-to-end process.

Results that speak for themselves

Thanks to the new procurement solution, Telstra has been able to lower its costs in several ways. For instance, it is estimated that simply moving away from paper-based procurement processes has reduced paper consumption at Telstra by 200,000 reams of A4 paper per annum. Further savings have arisen through the phase-out of four existing IT systems and associated processes from Phase I activity, with eight more slated to be shut down by the completion of Phase II—meaning less maintenance, environmental and IT management costs.

Phase I of the project, which covered processes, infrastructure and procurement, was forecast to save Telstra A\$500 million over seven years. Telstra is solidly on track to achieve its goal. Ian Wheatley says that Phase II will drive an additional savings of some A\$200 million. "We're taking what we learned in Phase I to drive further efficiencies in Telstra's logistics and inventory management, and achieve a total cost reduction of A\$700 million over a seven-year period."

For more information

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

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Top 5 global transshipment hub Optimized yard and vessel planning



Overview

This port, one of the world's largest container transshipment hubs, links shippers to an excellent network of 200 shipping lines with connections to 600 ports in 123 countries. Shippers have access to daily sailings to every major port in the world at this mega hub. Its position as a standard-bearer of excellence in port operations has consistently been recognized by the shipping community. In 2007, it was voted the "Best Container Terminal (Asia)" for the 18th time at the Asian Freight and Supply Chain Awards.

■ **Business need:**

The port needed a way to assign yard locations that would satisfy a stringent set of safety and operational conditions.

■ **Solution:**

By choosing an intelligent ship planning module developed using IBM® ILOG Constraint Programming (CP), the port terminals can now produce a loading plan in less than 30 minutes.

■ **Benefits:**

- *Stringent location planning*
- *Faster vessel turnaround*
- *Greater staff productivity*

The port handles about one-fifth of the world's total container transshipment throughput, amounting to a total of 29 million twenty-foot equivalent units (TEUs) of containers in 2008. As an integrated facility, its four world-class terminals serve 200 shipping lines, which offer connections to 600 ports in 123 countries.

This leading container transshipment hub uses innovative IT solutions as a competitive advantage to improve its operational efficiency, reduce vessel turnaround time, and achieve better service levels.

Challenge

At the port, vessels berth daily to discharge transshipment containers meant for other vessels. Upon discharge, all these containers have to be assigned temporary yard locations while waiting for their connecting vessels to arrive. These assigned locations have to satisfy a stringent set of safety and operational conditions.

Solution

The assigning of yard locations is currently carried out by an intelligent yard planning system that was developed using CP. During loading, the order in which containers are retrieved from the temporary yard and loaded onto the connecting vessel have a significant impact on the vessel's turnaround time. A good loading plan can take many man-hours to generate if prepared manually. By using an intelligent ship planning module, developed using CP, the loading plan can now be produced in less than 30 minutes.



“IBM ILOG optimization technology has allowed us to improve operational efficiency for yard and vessel planning while taking into account available resources and operating constraints.”

-- Top 5 global transshipment hub

Products and services used

Software

IBM® ILOG Constraint
Programming

Benefits

Optimization has enabled the port to utilize its port resources more efficiently. It has helped provide:

- Detailed yard location planning that meets stringent safety and stacking considerations.
- Effective loading plan that ensures timely vessel turnaround.
- Improved staff productivity with a higher level of automation.

The port is recognized as an industry benchmark for its port efficiency, reliability and professionalism. Optimization technology allows it to balance customer service goals and improve staff productivity, while taking into account the company's resources and capabilities.



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University of London builds a comprehensive student portal with IBM and Open Logic



Overview

■ The Challenge

The University of London provides administrative services for over 41,000 distance learning students as well as lead college academics and administrators. While some services can be provided online, most are still dependent on the hard-copy production and distribution of documents and study materials – and process improvements have been hampered by outdated and inefficient IT systems. The University also wanted to foster a greater sense of community among distance learners, but lacked the tools to promote collaboration.

■ The Solution

Working with Open Logic (www.openlogic.co.uk), the University is implementing IBM WebSphere Portal to surface SITS:Vision applications and a suite of IBM Lotus software – providing online learning environments, email and administrative support to every student via a simple Web interface. Secure single sign-on to the portal is provided by IBM Tivoli software.

■ The Benefits

Students will be able to access email, collaboration tools, and educational and administrative materials instantly, anywhere in the world – facilitating distance learning and reducing paperwork. The solution is expected to deliver future savings in the region of £300,000 per year in print, courier and administration costs alone. Centralised identity management should simplify the creation and deletion of online student accounts, helping the IT team deal with student management issues in a more effective manner.



“The Open Logic team clearly understand the needs of the educational sector... their expertise in IBM software and portal design matched with our in-house Web and infrastructure know-how makes a potent combination.”

*Craig O’Callaghan
Director of Business Transformation
University of London*

The University of London is one of the oldest, largest and most diverse universities in the UK. The University consists of 19 self-governing Colleges – including UCL, King’s College and the London School of Economics and Political Science – as well as the prestigious School of Advanced Study. In total, over 90,000 people study as internally registered students on campus. In addition there are also more than 41,000 distance learning students, registered by the University of London through the External System.

The University of London’s External System currently employs more than 180 staff, who are engaged in a wide range of administrative and academic activities. These administrative functions encompass the whole student lifecycle, from admission and enrolment through to graduation. The efficient and cost-effective delivery of these services is one of the principal challenges that the External System faces.

Craig O’Callaghan, Director of Business Transformation at the University of London, explains: “For a number of years, the back-end of our administrative processes has been driven by IT systems that have not enabled us to deliver the level of service which we would ideally like to give our students, particularly in the area of online services.

“Many of our processes are still paper-based, and somewhat time consuming to perform – which is not only a heavy burden on our administrative staff, but is also not cost-effective. We are currently spending approximately £2 million per year on print and distribution costs. We decided we needed a new IT infrastructure and software system that could help us

reduce costs and improve our ability to deliver our diverse range of services to students online.”

The University also wanted to foster a greater sense of community in the distance learning programme by providing collaboration tools to help students communicate and exchange ideas – both as an aid to the learning process and to help improve the University’s competitiveness in a global distance learning market.

Choosing a solution

After a comprehensive RFI process, the University of London chose the Tribal SITS product as its student information system.

“The SITS:Vision suite of applications offered excellent functionality as a general student information system, but we felt its portal and Web services capabilities were somewhat lacking,” says Craig O’Callaghan. “On the other hand, we were very impressed with IBM – especially in terms of the quality of the WebSphere Portal product and associated software products, which would enable us to deliver the SITS functionality via a sector-leading portal solution for distance learning students.”

IBM recommended working with Open Logic, an IBM Premier Business Partner, to design and implement a solution based on IBM WebSphere Portal. The portal would surface SITS:Vision and a suite of IBM Lotus applications – IBM Lotus Quickr, IBM Lotus Connections and IBM Lotus Sametime – as well as providing access to an IBM Lotus Domino email account for every student.

“Open Logic helped us draw up a detailed five-phase plan for the implementation, which would deliver

the core functionality as soon as possible without the risks of a 'big bang' approach," says Craig O'Callaghan. "The Open Logic team clearly understand the needs of the educational sector, and we were impressed by their work on a similar project at Cardiff University. Their expertise in IBM software and portal design, matched with our in-house Web and infrastructure knowledge, made a potent combination."

Secure single sign-on

To handle secure access to the new portal, Open Logic is helping the University of London deploy IBM Tivoli Access Manager and Tivoli Identity Manager. These tools are designed to provide a simple, single point of control for IT administrators, helping to deal with the significant student churn.

"With more than 41,000 students, we tend to have around 10,000 new registrations each year, and a similar number of accounts need to be archived as students graduate," explains Craig O'Callaghan.

"With the Tivoli solution, we can provide secure single sign-on access to all our students, delivering a customised view of their resources, which includes integration with the virtual learning environment (VLE). The solution enables students to take greater ownership of their learning experience, while at the same time reducing the administrative burden on the University staff who manage the business process."

Single sign-on provides a single username and password for each student that can be changed regularly, helping to increase security, with the aim of preventing unauthorised access to University resources.

Looking to the future

When the new solution goes live, the University of London will be able to provide its students with a more personalised online experience, with secure access to key administrative services, virtual learning environments and email via a single user-friendly Web interface.

"Above all, the advantage of the WebSphere Portal solution is its extensibility and service-orientation," says Craig O'Callaghan. "There is almost no limit to the range of services we can offer – and with WebSphere Portlet Factory, we can keep adding functionality to improve the student experience."

In financial terms, the outlook is positive. By eventually replacing paper-based administrative processes and reducing workload for staff, the University expects to realise savings of approximately £300,000 per year.

"The reduction in print, distribution and processing costs is going to make a significant difference to our budget, and we expect to see a full return on investment for the project – hardware, software and services included – within the next ten years," says Craig O'Callaghan. "In addition, the reduction in paperwork will help us meet environmental objectives, which are very important for the University as a whole."

He concludes: "Open Logic is helping us use IBM technologies to build a solution that offers significant benefits for the University, its distance learning students and its academic and administrative staff, both now and for the future."

"Above all, the advantage of the WebSphere Portal solution is its extensibility and service-orientation. There is almost no limit to the range of services we can offer – and with WebSphere Portlet Factory, we can keep adding functionality to improve the student experience."

*Craig O'Callaghan
Director of Business Transformation
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