MIB Group:
A Soft-Spoken Data Hub Delivers World-Class Performance

An IDC e-business Case Study

THE SUBJECT

Based in Westwood, MA, MIB is a centralized clearinghouse of underwriting related information geared toward the detection and deterrence of fraud during the risk assessment process for medically underwritten insurance products and services. MIB serves nearly 600 of the largest insurance companies in North America. Owned by the insurance companies it serves, MIB's mission is to help identify potential fraud in the underwriting process.

THE GOAL

To establish a more flexible, efficient and cost-effective method of delivering its services to customers. By adopting a more standardized service-delivery infrastructure, MIB is positioned to develop a wider array of services for customers—in less time and at lower cost. This increase in efficiency allows MIB to fulfill its mandate of delivering more value to customers.

THE SOLUTION

The core of MIB's e-business solution is a secure private extranet known as KnowledgeNow, which provides subscribing members with browser-based access to MIB's core services and a number of informational resources. Designed as a replacement for a thick-client, dial-up solution, KnowledgeNow runs on IBM WebSphere Application Server in an IBM S/390 environment. When MIB's solution is fully implemented, IBM's DB2 Universal Database will be at the core of the solution handling more than 140,000 transactions per day.

WHY IBM

"We were looking for a provider that had a strong track record in providing robust solutions in the insurance and financial services markets. IBM Global Services stood out head and shoulders above the rest because of its unparalleled experience and because its e-business vision coincided with our own."

IDC
Analyze the Future

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Innovation Spotlight

One of MIB's key challenges was to develop an architecture that can simultaneously support both early adopters of KnowledgeNow and users of the legacy, dial-up system. MIB addressed this issue by employing IBM MQSeries as the "glue" that tied together its older legacy systems with its new e-infrastructure.

Since its founding 100 years ago, the MIB Group has assumed a prominent position in the insurance underwriting process. The mission of the company—which is owned by the insurance companies that it serves—is to assist its customers in flagging fraud by maintaining a database of underwriting related information that it shares electronically with its member customers. In 1999, as part of its reengineering effort, the company launched a broad e-business initiative designed to transform its infrastructure from a thick-client, dial-up model to a more flexible Web-based model.

MIB worked closely with IBM Global Services to design a new architecture that would not only support its reengineering effort but also the development of a secure extranet-based service known as KnowledgeNow. By moving to a Web-based architecture, MIB expects to reduce some of its communications and other related costs while at the same time providing bulletproof security. Moreover, by increasing its use of reusable components in its application development process, the company expects to shorten the development cycle—thereby increasing speed-to-market.

MIB's Solution at a Glance

▶ **e-business State**	Internal Integration
▶ **Core Functionality**	MIB's KnowledgeNow is a secure, private extranet that allows its customers (insurance companies) to submit inquiries against its database of underwriting related information. The site provides industry-related content. The solution also employs Java code to consolidate the data into a unified, "customer-centric" format. By aggregating and making this data available to its members, MIB allows insurers to compare an individual applicant's information against information stored in the MIB database, thus helping insurers flag fraud in the application process.
▶ **Software**	IBM WebSphere Application Server, IBM DB2 Universal Database, IBM MQSeries, IBM VisualAge for Java
▶ **Servers**	IBM S/390 Parallel Sysplex Server, IBM eServer xSeries
▶ **Services**	IBM Global Services
▶ **Key Benefits**	▶ MIB expects to migrate 25 percent of its overall inquiry volume from its dial-up service to KnowledgeNow, resulting in reductions in variable communications costs. ▶ The phasing out of dial-up communications is also expected to reduce the cost of supporting modem banks and related hardware. ▶ MIB expects to achieve a 50 percent increase in application development productivity by focusing on reusability in its development approach. ▶ MIB's move toward a more standardized architecture will allow the company to better serve its customers and more quickly seize market opportunities. ▶ MIB's S/390-based infrastructure has maintained an availability rate of better than 99.99 percent.

Situation Analysis

▶ Background

The core of MIB's operation is a series of databases that contain confidential medical and claims data that are compiled continuously from reports submitted by member companies.

Based in Westwood, MA, the MIB Group is a centralized clearinghouse of underwriting related information serving nearly all insurance companies in North America. The mission of the 100-year-old company—which is owned by the nearly 600 insurers that it serves—is to help its owner/members to detect fraud in the underwriting process. The core of MIB's operation is a series of databases that contain confidential underwriting related data that are compiled continuously from reports submitted by member companies. By aggregating and making this data available to its members, MIB allows insurers to compare an individual applicant's information against information stored in the MIB database. The ultimate goal of MIB's service is to assist members in flagging fraud in the application process, generally by pointing out the omission of critical risk-related information. While MIB's data cannot be used as decisional information to determine eligibility for coverage, it nonetheless serves as a "trigger" for insurance companies to perform their own underwriting investigations to independently validate MIB information. MIB's core data reporting services include:

- *MIB Checking Service*, the core of its service portfolio, provides for the exchange of confidential, coded underwriting information among its members.
- *Disability Insurance Record Service* provides information on which other insurers have underwritten disability insurance on an applicant, thus helping insurers flag cases of over-insurance.
- *Insurance Activity Index Service (IAI)* alerts insurers to applicants who might be applying for multiple life, health, and/or disability policies with multiple companies.

Other services include the Health Claims Index (a Disability Claim Database Service), the Alpha Index Service (a name-search outsourcing service), MIB-TRAN (a private value added network) and Knowledge Services, a division that performs much of the life insurance industry's statistical research.

▶ The Need: An Infrastructure for the Future

While MIB had long maintained tight, secure electronic linkages with its customers, its reliance on a thick-client application architecture had begun to present more and more of a drain on its IT resources.

Nearly all companies need an impetus to begin their transformation into an e-business. For MIB, this impetus was the 1998 appointment of James Cook as its new CEO and "Chief Visioneer." In selecting Cook—an IT-savvy veteran of the financial services industry—MIB's Board of Directors sought a leader with a compelling vision of how MIB should adapt to better serve its customers. The central element of Cook's vision was to expand MIB's e-business capabilities, which would enable more efficient delivery of services to customers and open the door for a host of additional service opportunities.

While MIB had long maintained tight, secure electronic linkages with its customers, its reliance on a thick-client application architecture had begun to present more and more of a drain on its IT resources. For instance, changes to MIB's software required that the company distribute the new client to 1,500

users in 600 companies—a process that took anywhere from three to six months. In addition to tying up valuable IT resources, this approach had the effect of slowing the introduction of new functionality to MIB's customer base. By introducing a Web-based architecture, MIB saw the opportunity to radically improve the flexibility of its application development as well as the efficiency of its application management processes.

"We considered flexibility and speed to market as critical to our success. By deploying a Web-based application, we can bring new customers online much more quickly and cost-effectively. Furthermore, we are positioning the company with a firmer base to expand into new markets, including opportunities to expand services into overseas markets."

— Bob DiAngelo, CIO, MIB

While the central goal of MIB's e-business thrust was to serve customers better, the company also saw it as an opportunity to achieve a number of specific business goals. Take the example of expansion into new markets, an issue of increasing strategic importance for MIB. As CIO Bob DiAngelo notes, rolling out services based on a thick-client model adds complexity and lengthens the time required to bring new customers online. "We considered flexibility and speed to market as critical to our success," says DiAngelo. "By deploying a Web-based application, we can bring new customers online much more quickly and cost-effectively. Furthermore, we are positioning the company with a firmer base to expand into new markets, including opportunities to expand services into overseas markets."

Another ancillary benefit of deploying a Web-based architecture is the increased granularity of security that such an architecture affords. While data security has always been an exceedingly important issue for MIB and its members, recent regulatory changes have added a new facet to the issue. Specifically, Gramm Leach-Bliley (GLB), The Health Insurance Portability & Accountability Act (HIPAA), and other privacy-related laws place new burdens of confidentiality upon insurance companies, making advanced user-authentication mechanisms advisable. "While our dial security model has been robust enough to carry into the new millennium, the increased pressures on privacy is forcing us to put a more advanced security infrastructure in place," says DiAngelo. "We need to help our customers meet the heightened requirements for security, confidentiality, and privacy and therefore chose to use Public Key Infrastructure (PKI) in our new security model."

Action Plan and Decision Process

▶ First Steps

In early 1999, MIB's executive management began turning CEO Cook's vision into reality. At the top of the agenda was the need to select a solution provider that could help MIB translate its business vision into a coherent architectural strategy. According to DiAngelo, the dominant criterion governing MIB's provider selection process was depth of experience in building industrial strength e-business applications in a large enterprise environment. "We were looking for a provider that had a strong track record in providing robust solutions in the insurance and financial services markets," explains DiAngelo. "IBM Global Services stood out head and shoulders above the rest because of its unparalleled experience and because its e-business vision coincided with our own."

Soon after selecting IBM Global Services, MIB executive management (including CEO Cook and CIO DiAngelo) began a series of in-depth discussions aimed at producing an architectural plan to support its business goals. While MIB maintained complete autonomy over its technology selection process, explains DiAngelo, these meetings were beneficial because they also enabled IBM Global Services to provide a framework to guide MIB's choice of technology components. "IBM performed a facilitating role in our technology selection process," says DiAngelo. "By helping us articulate our technology needs, IBM enabled us to make better, more informed decisions."

As DiAngelo points out, MIB was committed to maintaining its IBM S/390 environment from the start. "Our experience as a mainframe user has convinced us that for security, availability and flexibility—all key criteria for us—the S/390 can't be beat," notes DiAngelo. "It's things like the S/390's bulletproof reliability and its hardened operating system that give us unshakable confidence in the S/390 as a mission-critical platform." For MIB, the importance of providing bulletproof reliability to customers stems from its crucial role in the insurance underwriting process. "If our customers can't get into our databases, many stop underwriting—because accessing the MIB database is the first step in the underwriting process," he continues. "The fact that we've been able to sustain an availability rate of better than 99.99 percent—coupled with IBM's commitment to support WebSphere and Java—is a big reason why we're so sold on the S/390."

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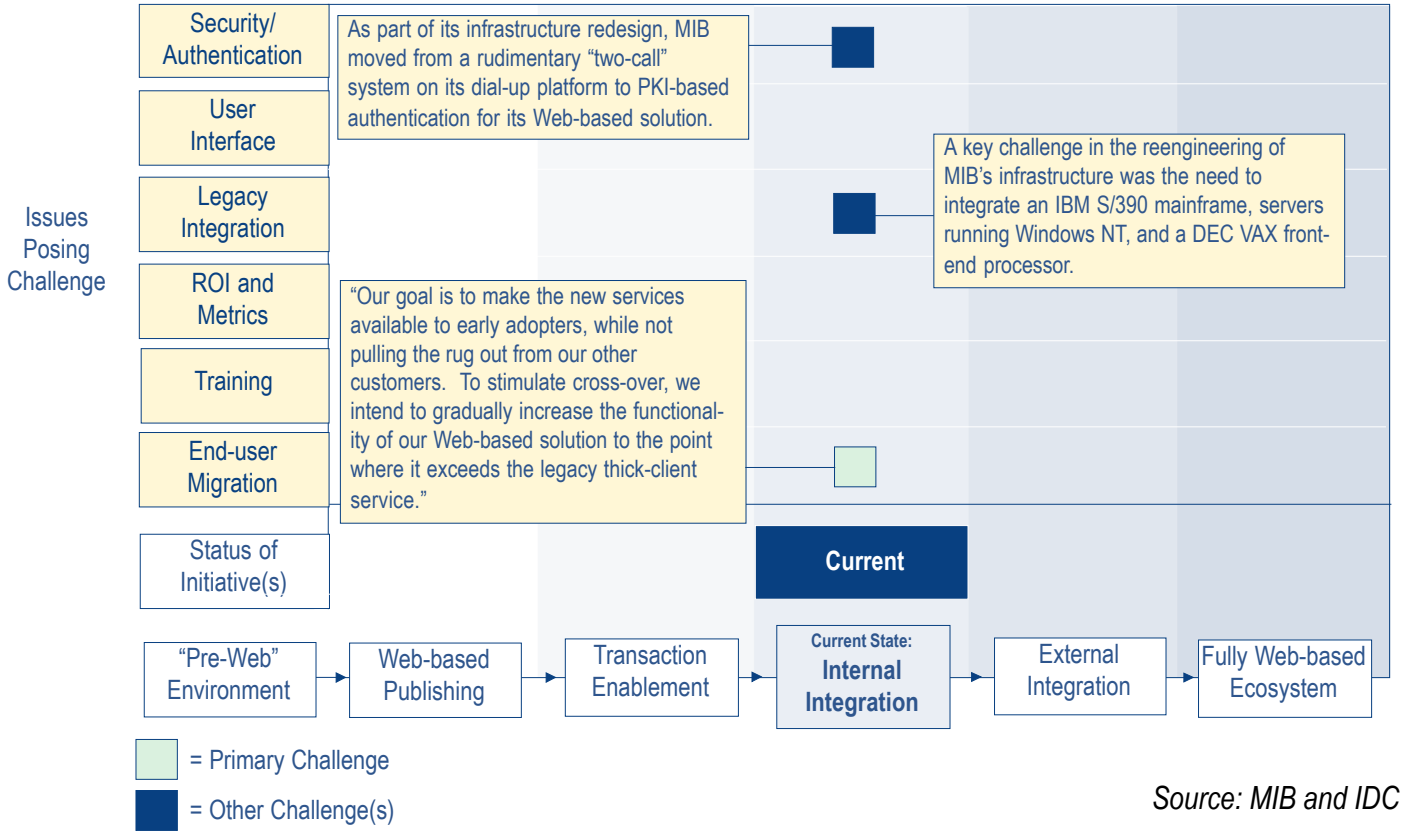
— Bob DiAngelo

One of the key architectural decisions that emerged from MIB's discussions with IBM was to replace its proprietary database with a standardized platform. Given MIB's commitment to the S/390 environment, explains DiAngelo, the company's choice of a database platform was largely a function of which product—IBM DB2 Universal Database or Oracle—performed better on the mainframe. "We felt that IBM DB2 provided far and away the better performance for the 390," notes DiAngelo. "We also saw DB2 as superior to Oracle in terms of usability and support, which we viewed as crucial." MIB selected IBM WebSphere Application Server as the platform's application server because of its strong support for Java, MIB's language of choice, and IBM's planned compliance with the J2EE (Java 2 Platform, Enterprise Edition) platform.

Another crucial architectural challenge facing MIB was the need to share data across a disparate array of legacy platforms, which—in addition to its IBM S/390— include servers running Windows NT and a DEC VAX front-end processor. In evaluating middleware options to integrate these systems, MIB turned immediately to IBM MQSeries, citing the breadth of platforms it supports and its wide level of use in the insurance industry. "Without a doubt, MQSeries has emerged as the de facto standard for the insurance industry," says DiAngelo . "The fact that the majority of our customers use MQSeries affirms our belief in the strength of its functionality."

Challenges Encountered in MIB's e-business Evolution



Source: MIB and IDC

▶ Challenges

As MIB prepared to reengineer its architecture from a thick-client to a Web-based model, its key challenge was to do so in a way that encouraged migration while at the same time allowed customers to move at their own pace. As discussed in the next section, MIB opted for a "gradualist" approach, introducing Web-based services alongside its legacy services. "Our goal is to make the new services available to early adopters, while not pulling the rug out from our other customers," explains DiAngelo. "To stimulate cross-over, we intend to gradually increase the functionality of our Web-based solution to the point where it exceeds the legacy thick-client service."

Solution Profile and Implementation Strategy

▶ The Solution: Functionality and Architecture

The core of MIB's e-business solution is a secure private extranet known as KnowledgeNow, which provides subscribers with browser-based access to MIB's core services, through an application called WEB-TERM, as well as a number of informational resources, including:

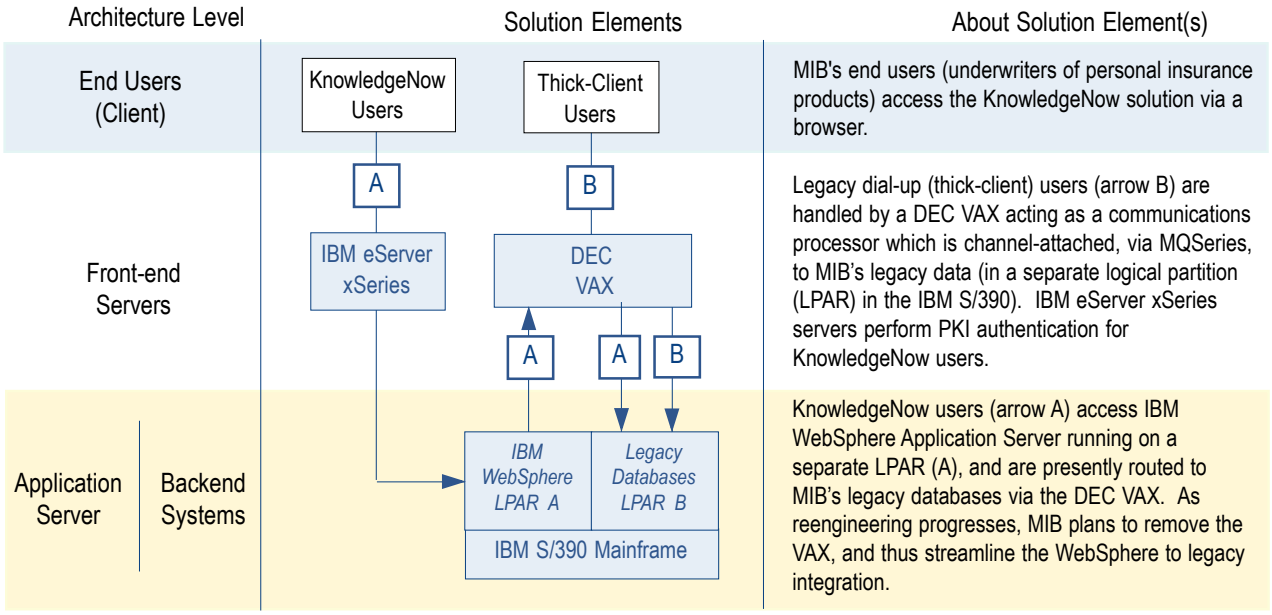
- articles and industry-related happenings;
- state-of-the-art morbidity and mortality studies;

- product and service information fact sheets, and frequently asked questions for MIB products and services.
- access to a wide range of customer service needs and automated support requests.

KnowledgeNow is currently used by approximately 150 end users in 25 companies. Ultimately, MIB expects to roll out KnowledegeNow to all 600 member companies at over 900 locations during the next 12 to 18 months.

Written in Java using IBM VisualAge for Java Enterprise Edition, the WEBTERM solution under KnowledgeNow runs on IBM WebSphere Application Server on MIB's IBM S/390. [MIB's three related public sites—www.mib.com, www.e-servicescorp.com, and www.knowledgedigest.com—run on a Windows NT server and also employ WebSphere.] The S/390 also runs IBM DB2, which will store all of MIB's core data (e.g., Checking Service Database, Insurance Activity Database, etc.) when all other legacy systems are reengineered. Other key elements of the MIB architecture include a legacy DEC VAX, which serves as a front-end to the S/390 for performing online database searches. The application running on the VAX is a proprietary messaging application (developed in the early 1990s) that handles connectivity, data staging, and other functions for MIB's dial-up, thick-client users. Integrating the S/390 with the DEC VAX and the Windows NT servers is IBM MQSeries. For security, the solution employs public-key infrastructure technology (which relies on digital keys and certificates to authenticate the identity of users).

Basic Architecture of the MIB Solution



Source: MIB and IDC

▶ The Solution in Action

After clicking on a desktop icon, users of the KnowledgeNow solution are validated via their digital certificate and directed to the main page of the site. To perform a query, the user then clicks the WEB-TERM icon, which causes the application to deposit a Java applet on the user's desktop. [This applet allows the user to access any of MIB's database services.] To execute an inquiry, the user then inputs the name, date and place of birth of an insurance applicant and submits the request. The data from the submitted request is then formatted and sent through MQSeries to the DEC/VAX and into the appropriate MIB legacy database (which will eventually be replaced with IBM DB2 running on the S/390). The legacy system then produces one or more replies, which are then formatted and sent back to the user.

One of the most important improvements to MIB's solution under the new architecture relates to the quality of data presentation. The weaknesses of MIB's legacy system were emblematic of many legacy systems in general, including those in the insurance industry—namely, a tendency to organize and report data around products as opposed to an individual. Because a person's information could be stored in any or all of MIB's databases, an inquiry could easily yield a flood of redundant information on an individual. To rectify this, MIB built a Java application within the WEB-TERM solution that consolidates the information and presents it in a "person-centric"—not "product-centric"—format.

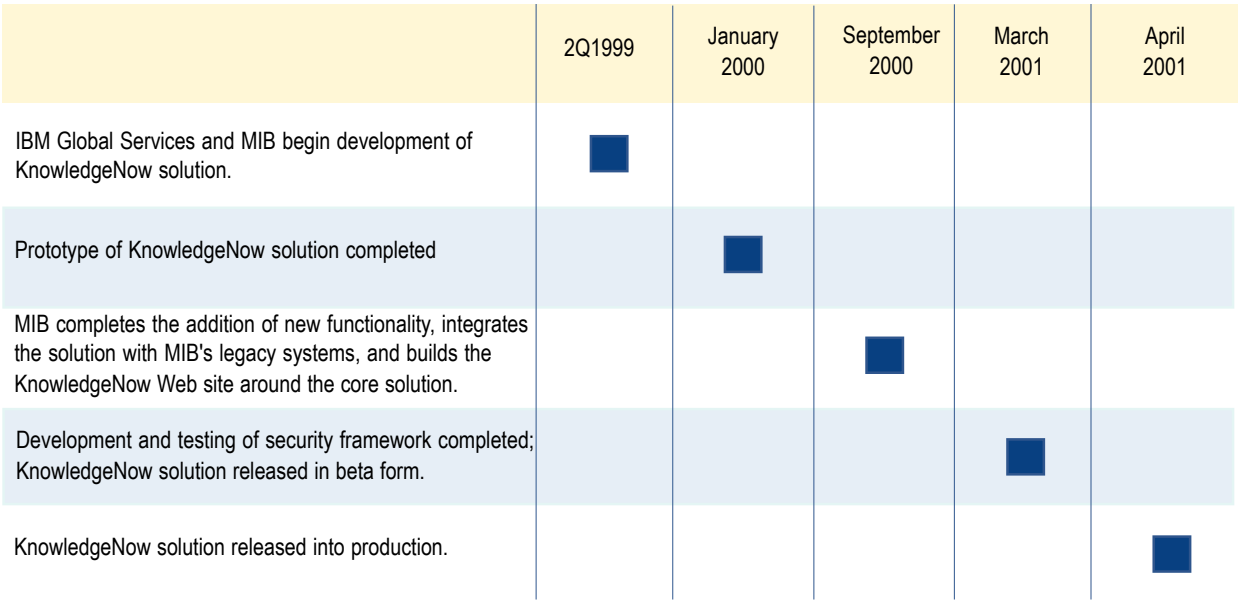
▶ The Project

As discussed previously, MIB began the project in 1Q99 with a roughly four-month engagement with IBM Global Services focused on architecture planning. At the conclusion of the engagement, MIB's internal IT staff began deploying a base of reusable software components that it would subsequently use to develop a set of enterprise applications. The most prominent of these applications (known internally as the "MIB Application Family") was the KnowledgeNow solution. By following the service-based approach to application development—an approach defined by the reuse of an underlying base of software assets to create groups of applications—MIB sought to improve the overall efficiency of its application development and management processes (see the following section).

At the same time, IT staff began working closely with IBM Poughkeepsie's Jumpstart organization, whose mission is to assist companies in using leading-edge technologies to solve real business problems. By the end of 2Q99, IBM Global Services, in consultation with MIB internal staff, had begun the actual development of the KnowledgeNow prototype. The prototype was completed in January 2000.

The next phase of the project, driven primarily by MIB IT staff, involved the addition of new functionality, the integration of the WEB-TERM solution with MIB's legacy systems, and the construction of the KnowledgeNow Web site

Development Timetable for MIB's KnowledgeNow Solution



Source: MIB and IDC

around the core solution. While each of these processes proceeded in parallel, the integration process took the longest (nine months). The final stage of the project was the design, development and testing of the solution's certificate-based security model, which was completed in January 2001. MIB introduced the solution in beta form in March and as a production application soon after.

Business Results

MIB expects to amass a wide range of business benefits from its e-business initiative. Ultimately, the company expects 25 percent of its inquiry volume (which now stands at approximately 140,000 transactions per day) to be addressed by the KnowledgeNow solution. As more and more customers move to the Web-based model from the dial-up, thick-client model, MIB expects to achieve savings in its variable communications costs. Further, the phasing out of dial-up communications is also expected to reduce the cost of supporting modem banks and related hardware. As DiAngelo notes, the cost savings emanating from MIB's e-business initiative are in line with the project's primary goal—providing steadily increasing value to the community of insurers that it serves. "Anytime we can lower some of our costs and improve service we are fulfilling the mandate from our Executive Board and our member company owners" said DiAngelo.

As is often the case in e-infrastructure redesigns, MIB expects to achieve significant benefits on the application development and management front.

Overview of MIB's Business Results Achieved

Business Process/Issue	Nature of Benefit	Description or Metric
Communications	Cost Reduction	MIB expects to migrate 25 percent of its overall inquiry volume from its dial-up service to KnowledgeNow, resulting in a reduction in its variable communications costs.
Hardware maintenance	Cost Reduction	The phasing out of dial-up communications is expected to reduce the cost of supporting modem banks and related hardware.
Application Development	Increased Productivity	MIB expects to achieve a 50 percent increase in application development productivity by focusing on reusability in its development approach.
Strategic Marketing	Faster Speed-to-Market	MIB's move toward a more standardized architecture will allow the company to better serve its customers and more quickly seize market opportunities.
System Uptime	High Availability	MIB's S/390-based infrastructure has maintained an availability rate of better than 99.99 percent.

Source: MIB and IDC

These benefits range from faster and less expensive functionality improvements, to lower costs and higher quality on the application development side. Indeed, DiAngelo expects no less than a 50 percent increase in application development productivity as MIB focuses more on reusability in its development approach. "Through tools such as VisualAge for Java, reusable components and the adoption of the Rational Unified Process to guide development, we expect to deploy new services more quickly, with fewer resources, and with better quality," relates DiAngelo. "The move toward a more standardized architecture will allow us to better serve our customers and more quickly seize market opportunities." The latter benefit is exemplified by MIB's plans to expand into new markets—an effort that will be made much easier by the company's newfound capability to quickly roll out Web-based services.

Case Epilogue

Going forward, MIB plans to continue expanding the functionality of KnowledgeNow, while further upgrading its infrastructure. One of the company's first focal points will be the widespread introduction of Enterprise Java Beans (EJB) across its entire infrastructure. According to DiAngelo, the adoption of EJB adheres to his goal of expanding the use of component-based technology and moving toward a more standardized infrastructure. "EJB supports rapid development and the distribution of components across the enterprise and—equally important—it provides us with more portability," says DiAngelo. "If we adhere to the J2EE standard, we can run our environment on any J2EE compliant platform."

"Web technology in general and KnowledgeNow in particular positions us as a technology-savvy company that knows how to utilize state-of-the-art tools to fulfill the needs of its customers to solve real business problems."

— Bob DiAngelo

MIB believes its recent e-business initiatives have delivered major value to its customer base, thus fulfilling the mandate laid out by its Board of Directors at the project's outset. Equally important, says DiAngelo, the company's aggressive e-business moves have begun to burnish its already-strong image in the insurance industry. "Web technology in general and KnowledgeNow in particular positions us as a technology-savvy company that knows how to utilize state-of-the-art tools to fulfill the needs of its customers to solve real business problems," says DiAngelo. "By building our solutions with IBM technology, we're demonstrating our commitment to delivering high performance, and reliable service to our customers."

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