people's bank

IBM

People's Bank:
Banking on IBM to Build an Integrated e-Infrastructure

An IDC e-business Case Study

THE SUBJECT

With managed assets of more than $13 billion and 144 branches, People's Bank is Connecticut's largest independent bank. The Bridgeport-based bank provides commercial, consumer, insurance and investment services, and operates a credit card issuance business ranked 16th in the nation.

THE GOAL

People's Bank sought to migrate its highly heterogeneous legacy infrastructure to a Web-based, n-tier model to make application development easier, faster, and less costly—thus improving its ability to respond rapidly to market opportunities.

THE SOLUTION

The People's Bank solution is an "n-tier" service-delivery infrastructure that employs a browser front end, IBM WebSphere Application Server in the middle of the architecture, and a heterogeneous array of mainframe and client/server applications at the lowest tier. IBM MQSeries Integrator facilitates the integration of the middle tier with the bank's legacy systems through a message-broker hub. The solution is also seamlessly integrated with a number of external service provider partners.

WHY IBM

"The fact that IBM had such a mature, integrated suite of middleware products was extremely appealing to us. We're very happy to rely on a proven product like WebSphere Application Server—and we're confident that it will deliver the performance and reliability that we demand."

IDC
Analyze the Future

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Innovation Spotlight

One of the major themes of the People's Bank initiative was to create a more efficient and flexible integration scheme, both internally and with external partners. The highlight of the solution is the use of MQSeries Integrator's intelligent routing and data transformation capabilities to facilitate data sharing across different operational areas of the bank.

People's Bank is Connecticut's largest independent bank, with managed assets of more than $13 billion and a network of 144 branches and more than 200 ATMs. At a time when the banking industry has consolidated—driven by the maxim that "bigger is better"—People's Bank has focused on staying nimble and customer-friendly. The central element of its strategy has been to offer a wide range of innovative services and delivery channels. As the need to rapidly respond to the market with new services was becoming more and more pronounced, the bank concluded that its highly heterogeneous IT architecture was limiting its flexibility and slowing its speed to market.

In early 1998, the bank engaged the IBM Application Integration Middleware (AIM) Group to assist in developing an architecture that would allow the bank to tie together all of its service delivery platforms—Web-based services, branch-based tellers, call center reps, and telephone-based services—back to a common set of business rules that would govern all channels. Seamless links to the bank's external partners were also created to support realtime data transfer. In addition to gaining the ability to develop and introduce new services more rapidly and at lower cost, the solution has lowered costs and improved the efficiency of several operational areas including call center operations.

The People's Bank Solution at a Glance

e-business State	External Integration
Core Functionality	The People's Bank solution ties all of the bank's service delivery platforms to a common set of business rules governing all delivery channels, allowing the bank to develop and introduce new services more rapidly and at lower cost.
Software	IBM WebSphere Application Server (Advanced Edition 3.5 and Enterprise Edition 3.5), IBM MQSeries Integrator V2.0.2, MQSeries V5.2, Lotus Domino R5, Tivoli Enterprise Suite
Servers	IBM S/390 Parallel Enterprise Server
Services	IBM Application Integration Middleware (AIM) Group
Key Benefits	▶ Credit card call center response times were reduced by an estimated 30 percent as a result of more streamlined processes. ▶ Training time for new call center reps was reduced by an estimated 50 percent through these same process improvements. ▶ A more efficient set of call center processes has enabled the bank to minimize its per-query charges to 3rd party credit agencies. ▶ Moving to a browser-based interface has lowered the bank's desktop administration costs by more than $100,000 annually.

Situation Analysis

▶ Background

People's Bank is a diversified financial services company providing commercial, consumer, insurance and investment services. With managed assets of more than $13 billion, People's Bank is Connecticut's largest independent bank. Since its founding in 1842 as a traditional savings and loan, the Bridgeport-based bank has continued to maintain a strong base of retail banking customers, which it serves through a network of 143 branches and more than 200 ATMs. While keeping its retail roots strong, People's Bank has also built a strong commercial banking business, including a credit card issuance operation ranked 16th in the nation.

As banking industry consolidation has led to a competitive landscape increasingly populated by giants, People's Bank has focused its energies on staying nimble and customer-friendly.

As banking industry consolidation has led to a competitive landscape increasingly populated by giants, People's Bank has focused its energies on staying nimble and customer-friendly. To achieve this, the bank has pursued a strategy built around innovative service delivery channels designed to improve its customers' overall banking experience. Examples of the bank's more innovative service delivery channels range from telephone-based banking (a service which People's Bank was the first in the nation to offer) all the way to state-of-the-art Internet-based banking and stock trading services. By offering a wide range of services—delivered anytime, anywhere—People's Bank aims to further strengthen its customers' loyalty and cement its position as the region's premier full-service bank.

▶ The Need: A Flexible Service-Delivery Infrastructure

One of the most critical strategic assets of a bank—be it a regional or money-center bank—is an underlying IT infrastructure that facilitates the execution of its core business-level strategies. In the late 1990s, strategic planners within People's Bank discerned a growing gap in the bank's need for speed-to-market and the IT infrastructural flexibility required to make it happen. The root of the problem, says Carol Anderson, Vice President of Information Systems, was the highly heterogeneous, multi-layered legacy architecture that underpinned the bank's operations. "After starting out as a Unisys mainframe shop, the bank gradually evolved into a very diverse IT landscape, with more mainframes and a collection of mid-range and client/server platforms, all supporting different aspects of the bank's operations," says Anderson. "The fact that our systems were integrated with external service provider partners added still more complexity to equation."

"We recognized the need to create an integrated—and simplified—service delivery infrastructure on the back end to support our multi-channel approach on the front end. We saw Web-based technology as the way to get there."

— Carol Anderson, Vice President of Information Systems, People's Bank

While serving the bank well to date, this complex IT architecture had begun to impede the strategic agility on which the company was becoming increasingly reliant. This problem was especially evident in the area of application development related to new service offerings, as well as the support of existing applications. As Anderson notes, the bank's heterogeneous architecture made application development and support more arduous, time-consuming, and costly than it needed to be—and the time had come for a change. "We recognized the need to create an integrated—and simplified—service delivery

infrastructure on the back end to support our multi-channel approach on the front end," says Anderson. "Equally important, we saw Web-based technology as the way to get there."

The bank's plan was to develop an architecture that would allow it to tie all of its service delivery platforms—branch-based tellers, call center reps, telephone-based services, and Web-based services—back to a common set of business rules that would govern all channels. By centralizing its business rules, explains Anderson, the bank could develop and introduce new services faster and at lower cost. "Our goal was to build an e-infrastructure that is synergistic with our integrated service delivery model," says Anderson. "Our approach was to build a solution that would enable us to both unify our internal IT resources, and also to integate tightly with our external partners, which allows us to broaden the range of services we can offer to our customers."

Action Plan and Decision Process

▶ First Steps and Vendor Selection

People's Bank's vision of an integrated e-infrastructure driving all of its service delivery channels was articulated in 1997, the product of a strategic planning review conducted by a team within the IT organization. In 1998, the team took the first steps to make its vision a reality when it began a five-month internal study designed to map out the infrastructure building blocks (e.g., middleware, messaging, and databases) that would be required. At the completion of the review in mid-1998, the People's Bank team then began compiling a set of general guidelines that would govern the vendor selection. While the reliability, availability, and scalability of the vendor's core technology was an important consideration, notes Anderson, the vendor's track record and expertise emerged as even more important. "Because we knew this was going to be a very complex undertaking, we were looking within a narrow range of providers for someone with expertise across a broad range of areas—so we wouldn't have to piece together the solution from multiple vendors," says Anderson. "We wanted a provider who would assume accountability and provide us support if things went wrong."

"Finding a solutions provider with the ability to integrate with our legacy Unisys platform was really our Holy Grail—and our biggest worry. It was one of the project's biggest question marks."

— Carol Anderson

The People's Bank team also applied a highly defined—and perhaps its most important—criteria that was related to its ambitious legacy integration plans. Specifically, the selection team required any provider under consideration to be capable of integrating with the Unisys mainframe that runs the bank's core deposit system. As Anderson points out, the ability to find a provider capable of integrating with the bank's legacy Unisys systems was by no means taken for granted, thus casting a pall of uncertainty around this critical aspect of the project. "Finding a solutions provider with the ability to integrate with our legacy Unisys platform was really our Holy Grail—and our biggest worry," relates Anderson. "It was one of the project's biggest question marks."

▶ IBM Makes the Connection

Among the many providers vying for the project was the IBM Application Integration Middleware Group, which focuses on a specific set of IBM middleware products, including MQSeries and WebSphere Application Server. After meeting with various prospective providers, the People's Bank selection team viewed the IBM AIM Group as fundamentally superior in terms of both access to core technology and relevant expertise. However, as Anderson explains, the most compelling—and dramatic—reason for its ultimate selection can be traced to a proof-of-concept solution the group developed to showcase its ability to integrate with the Unisys platform. "In the course of the selection process, the AIM Group had managed to locate an IBM partner that had developed a connector to the Unisys platform based on MQSeries," says Anderson. "When the IBM team was able to very quickly reproduce one of our integrated client/server applications—and make it perform significantly better—we were duly impressed."

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— Carol Anderson

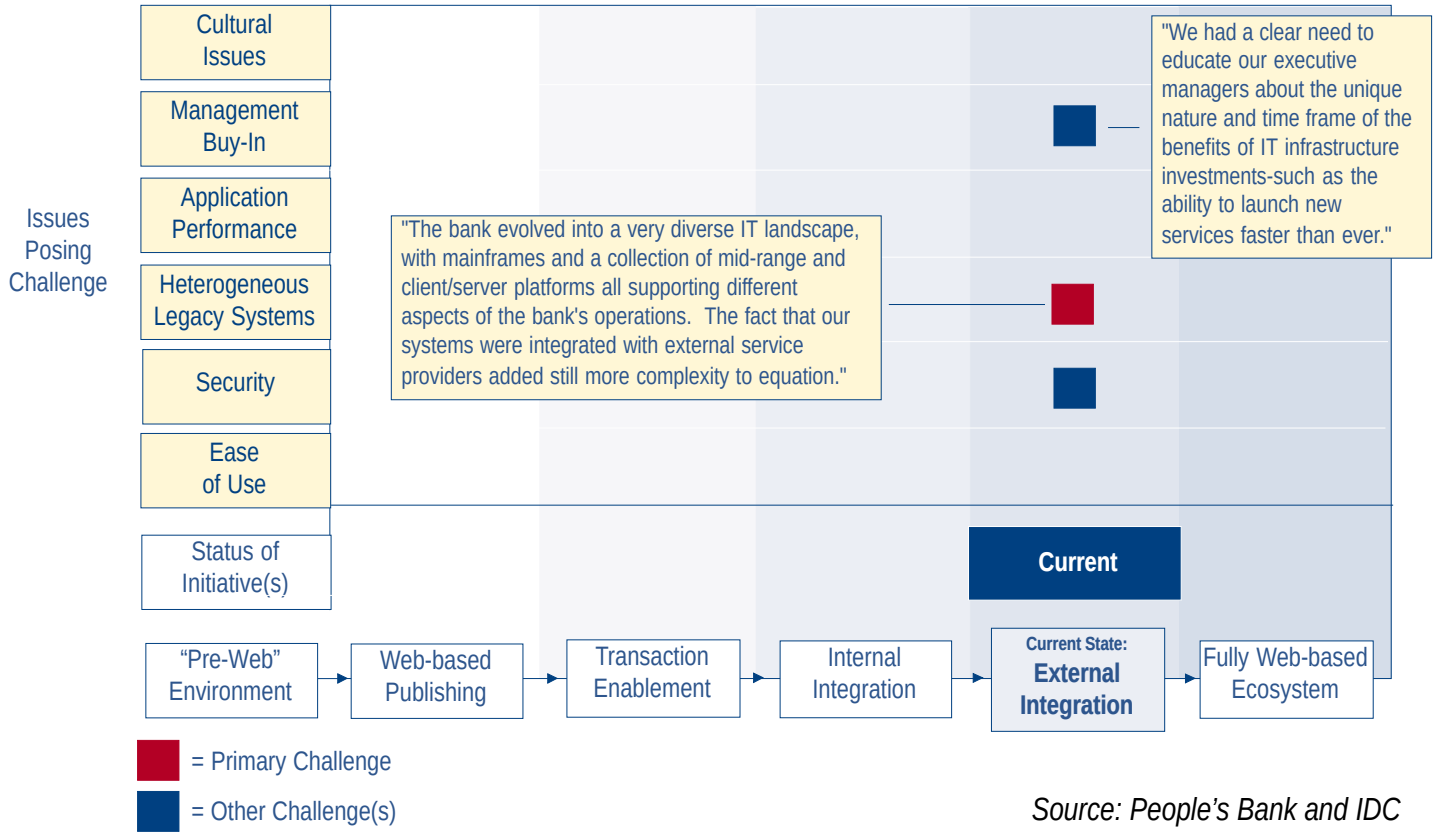
While Anderson calls IBM's Unisys integration coup "icing on the cake," she is also quick to point to the merits of IBM's underlying technology—specifically middleware—as a key factor behind the bank's selection of the AIM Group. "The fact that IBM had such a mature, integrated suite of middleware products was extremely appealing to us," says Anderson. "We're very happy to rely on a proven product like WebSphere Application Server—and we're confident that it will deliver the performance and reliability that we demand."

▶ Challenges

Much has already been said about the inherent technical challenge the People's Bank and AIM teams faced in building an integrated service delivery on top of such a heterogeneous IT architecture. Another important technical challenge faced by the developers was the need for the new architecture to preserve the same high levels of security that characterized the bank's legacy architecture. However, as Anderson notes, IBM's long history as a leader in the data security arena left her team confident that the IBM solution would meet the bank's exacting security standards. "We view the security of our IT architecture as one of the pillars of our business," explains Anderson. "Based on IBM's known leadership and the expertise we saw within the AIM team, we had absolutely no doubt that our architecture's security would remain rock solid."

In addition to the technical challenges of re-architecting the People's Bank application infrastructure, the initiative also faced organizational hurdles within the bank that stemmed from the timing of funding (up-front) vs. payback (deferred) for its infrastructure initiative. Indeed, while Anderson's team received strong support from upper management for the initiative, she nonetheless viewed the internal positioning of the project's value proposition as challenging. "We had a clear need to educate our executive managers about the unique nature and time frame of the benefits of IT infrastructure investments—such as the ability to launch new services faster than ever," explains Anderson. "Now our management is completely on board and are attuned to looking at how we can leverage these investments."

Challenges at Various States of People's Bank's e-business Evolution



Source: People's Bank and IDC

Solution Profile and Implementation Strategy

▶ Anatomy of a Bank: The People's Bank Legacy Architecture

When the IBM AIM team began the People's Bank engagement in 1998, its challenge was to integrate front-end services with a complex and varied IT environment. At the core of this architecture are a Unisys mainframe (which runs the bank's core checking and banking applications and teller systems) and an IBM S/390 (which runs back-office applications such as general ledger, payroll, human resources, and statement processing as well as commercial and consumer loan systems). The bank's architecture also incorporated a wide range of standalone client/server applications, which run commercial mortgage systems, credit card call center operations, and a variety of department-level applications. The bank also runs a large data warehouse and imaging application used for recording and storing current and historical customer account data. To support these applications, People's Bank maintains a base of approximately 300 UNIX and Windows NT servers, which (like its mainframes) reside in two remote data centers.

People's Bank employs Tivoli Enterprise as its IT management software suite,

which has proven critical to the management of the bank's multi-platform environment. Within the suite, the bank employs Tivoli Storage Manager to perform back up and restoration of business data, as well as Tivoli Workload Scheduler to automate the scheduling and execution of applications across its multiple platforms. The bank also employs Tivoli Enterprise Console, Tivoli Distributed Monitoring and Tivoli Manager for Network Connectivity to actively manage its systems availability.

In addition to its internal systems, People's Bank also integrates with a number of third-party realtime data sources. For example, the bank's credit card processing system is seamlessly integrated with FDR, a credit reporting agency that provides critical data feeds to call center representatives. Similarly, the bank's Web-based trading system is integrated with third-party service providers, which provide securities transaction processing services (ADP, Inc.) and price quote data (NAQ.com), respectively, via secure extranet links.

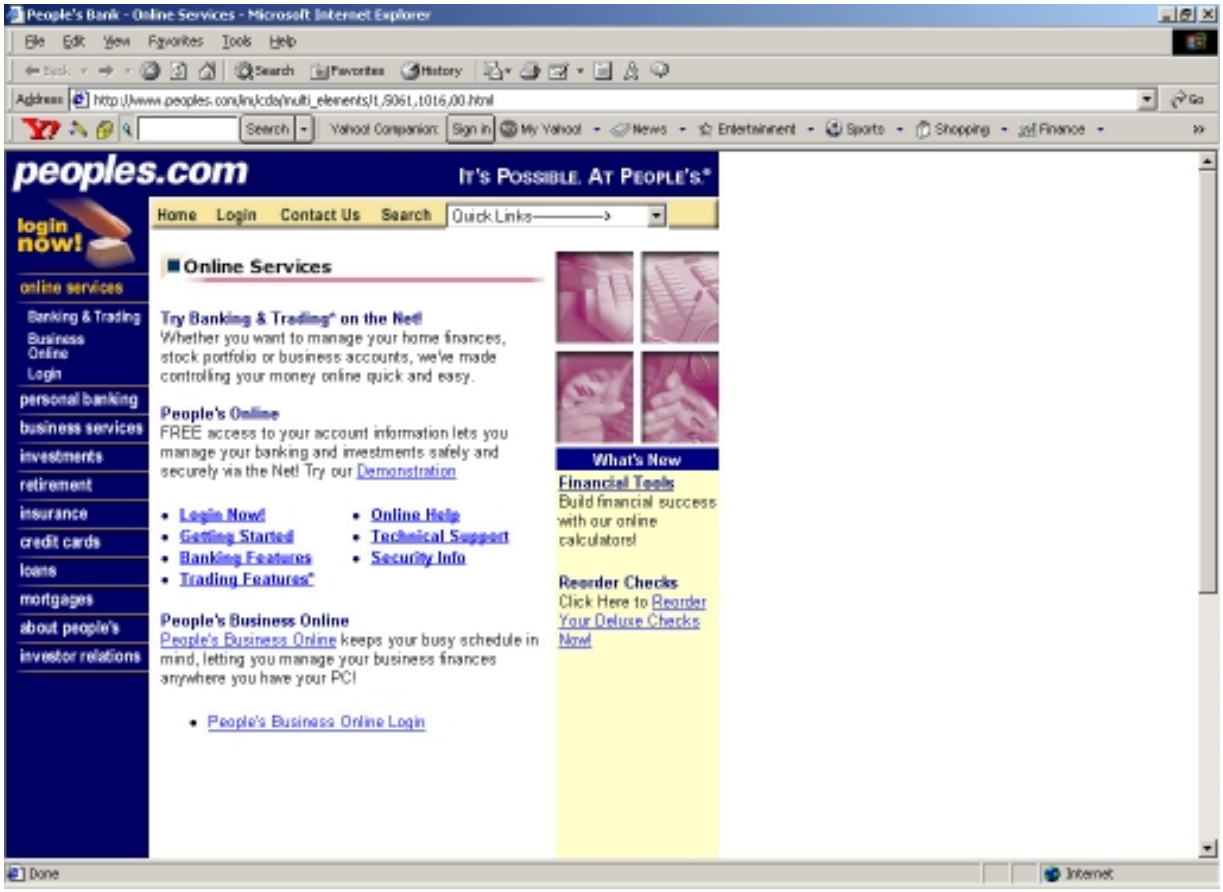
▶ The Project

The implementation effort, which began in August 1998, involved staff from both IBM AIM team and the People's Bank IT organization. According to Suresh Ganesan, chief IBM architect for the project, the development team's general approach was to rebuild the People's Bank's back-office systems using a common-connection infrastructure. "A key part of our approach was to use

Development Timetable for the People's Bank Solution

	1997	3Q98	1Q99	2Q99	1Q00	4Q00
People's Bank first articulates its vision of an integrated e-infrastructure driving all of its service delivery channels.	■					
IBM Application Integration Middleware (AIM) Group selected to develop the solution; development process begun.		■				
The AIM/People's Bank team completes the development of the online banking application.			■			
The AIM/People's Bank team completes the online trading application and establishes external integration links with ADP and NAQ.				■		
The AIM/People's Bank team completes the integration of credit card call center application; establishes external integration link with FDR.					■	
The AIM/People's Bank team completes development of the credit card customer self-service platform.						■

Source: People's Bank and IDC



IBM MQSeries as the underlying asynchronous messaging infrastructure, and to provide a Web front end to important customer and internal touch points," explains Ganesan. "We're using WebSphere Application Server [Enterprise and Advanced Editions] to provide these Web interfaces."

One of the most noteworthy aspects of the People's Bank implementation is the high degree of reusability built into the common-connection infrastructure. Under this framework, various front-end applications (e.g., Web-based trading) make use of the same elements of underlying code. This approach not only simplifies the ongoing development of new front-end applications, but also makes it easier to present multiple applications (e.g., online banking and trading) through a single interface.

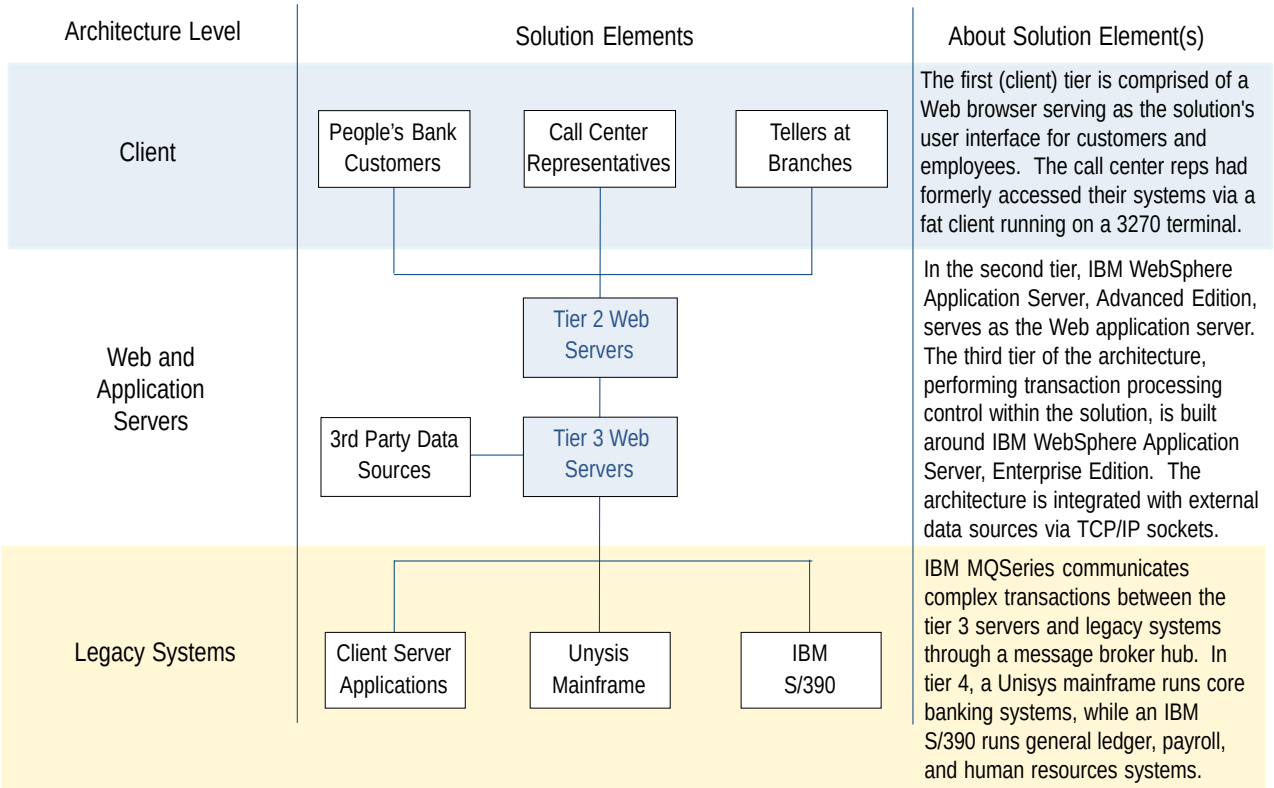
The first phase of the implementation effort (begun in August 1998) was the development of an Internet banking solution (Online Net Banking), which was completed in April 1999 after a four-month development process. Soon after, in October 1999, the bank's online trading solution (Online Net Trading) was introduced. [The Online Net Banking solution now supports approximately 60,000 users, while Online Net Trading currently supports approximately 2,000 users.] The third phase of the engagement focused on the People's Bank credit card call center, where representatives handled issues ranging from card activation to payment disputes. At the time, call center reps were equipped

with 3270 terminals running a fat client application that accessed both internal and third-party data. As with the banking application, the team's general approach was to use MQSeries and WebSphere Application Server to rendezvous all the back-end data to a single browser-based interface viewed by the reps, thus obviating the need for the less efficient fat client application. The call center integration phase of the implementation was completed in 1Q2000. In October 2000, the bank further strengthened its credit card call center offerings with the introduction of a Web-based customer self-service platform that leverages the bank's underlying business rules. The platform now serves approximately 20,000 credit card customers.

▶ Solution Architecture

The new People's Bank infrastructure employs a four-tier architecture. The first (client) tier is comprised of a Web browser serving as the solution's user interface. In the second (server) tier, IBM WebSphere Application Server, Advanced Edition, serves as the Web application server for the solution. The third tier of the architecture, performing transaction processing control within the solution, is built around IBM WebSphere Application Server, Enterprise Edition. Linking this tier with the bank's heterogeneous legacy systems (tier 4) is IBM MQSeries which communicates complex transactions between the bank's multiple legacy systems through a message broker hub based on MQSeries Integrator. [MQSeries Integrator is message-brokering software that uses MQSeries for transporting messages in realtime. It is designed to simplify

Basic Architecture of the People's Bank Solution



Source: People's Bank and IDC

the complexity of connections between applications by establishing a hub through which all messages pass.] While linkage to the bank's external data service providers are now performed via TCP/IP sockets, the bank is moving toward integrating via MQSeries Integrator (tier 3) in the future.

In addition to providing a platform for the faster and more efficient deployment of new services, the new People's Bank architecture was also designed for high performance. According to Ganesan, the fundamental architecture of the system ensures optimum levels of availability and scalability. "The platform as we designed it enables the customer to tune the performance of the system at a very granular level," notes Ganesan. "This property allows the system to sustain extremely high levels of performance—and to grow exponentially or incrementally as usage levels dictate."

▶ Bringing Integration to a Higher Level

In designing People's Bank's next generation e-infrastructure, the People's Bank and IBM development team sought to fully leverage the inherently strong integration capabilities within the IBM middleware suite. Now the team seeks to push the boundaries of tight integration even further by extending the message broker functionality used in the solution through the broader use of MQSeries Integrator. According to Ganesan, the central issue standing in the way of the bank's vision of sharing data across all service delivery channels is that of data structure and format. "Because the bank has traditionally used data in a silo fashion—with specific functions using specific data, and little or no sharing outside these silos—incompatible data formats have naturally evolved," notes Ganesan. "To share this data across the company, we will use MQSI to create a layer of intelligence in the architecture that puts data into the proper format, based on the specific needs of the application accessing the data."

> "MQSeries Integrator will transform data passing through this 'tunnel' to the right format of the other side depending upon who is on the receiving end. Because the infrastructure that provides this capability will be fully reusable across the bank, we won't have to the reinvent the wheel for every cross-functional integration the bank seeks to enable."
>
> — Suresh Ganesan, chief IBM architect for People's Bank engagement

Ganesan and his team see MQSeries Integrator's intelligent routing and data transformation capabilities as critical to achieving this vision. Under the emerging architectural framework, requested data will flow through the message broker, where it will be intelligently routed to the back-end application and then be transformed into a compatible data structure. "MQSeries Integrator will transform data passing through this 'tunnel' to the right format of the other side depending upon who is on the receiving end," explains Ganesan. "Because the infrastructure that provides this capability will be fully reusable across the bank, we won't have to reinvent the wheel for every cross-functional integration the bank seeks to enable."

Business Results

With the first phase of its infrastructure revamp behind it, People's Bank has already achieved a range of tangible business results. At the top of the list is a general improvement in the overall performance of customer-facing applications. "For People's Bank, application response time is one of our most important performance attributes," says Anderson. "In the short time our re-

Overview of People's Bank's Business Results Achieved

Business Process Area	Nature of Benefit	Description or Metric
Customer Service	Response Time	Credit card call center response times were reduced by an estimated 30 percent as a result of more streamlined processes.
Customer Service	Reduced Training Costs	Training time for new call center reps was reduced by an estimated 50 percent through these same process improvements.
Customer Service	Cost Avoidance/Minimization	A more efficient set of call center processes has enabled the bank to minimize its per-query charges to 3rd party credit agencies.
IT Desktop Administration	Lower Costs	Moving toward a browser-based interface has lowered the bank's desktop administration costs by more than $100,000 annually.
Application Performance	Throughput and Scalability	The bank has experienced dramatic improvements in the performance, reliability and quality of its re-tooled applications.
Online Financial Services	Heightened Competitive Advantage	People's Bank ranked 6th in the Western Hemisphere by Speer and Associates in its 2001 report rating financial services Web sites.

Source: People's Bank and IDC

tooled applications have been up and running, we've experienced dramatic improvements in their performance, reliability and quality. We're positioned to capture even more benefits going forward as we reduce our application development timeframes."

Tangible business-level benefits of the IBM engagement have also begun to emerge for People's Bank. Take the credit card call center, for instance, where reps who once accessed data through an unwieldy combination of interfaces now do so through a single, browser-based interface. In addition to cutting customer response times by an estimated 30 percent—and producing a comparable increase in customer satisfaction—the retooled call center has reduced training time by half. Given the high turnover typically prevalent within call centers, any reductions in training time and costs have a dramatic impact on overall call center costs. Finally, since the new unified interface increased the efficiency with which call center reps access the credit agencies' data, the

bank has been able to minimize the payment of per-transaction charges that it makes to the agencies.

While much of the development work has centered on the inner tiers of the People's Bank architecture, the bank has also experienced major benefits in the area of desktop administration. As Anderson points out, the bank's move from a fat-client to a Web-based interface has taken away a major headache and provided a major source of cost reduction. "For example, before the project, when we had a new code release in the credit card call center, we needed to deploy code to 300 desktops," notes Anderson. "Now the whole issue of desktop deployment has simply gone away. Benefits like this don't happen every day." Anderson estimates the bank's cost savings to be more than $100,000 annually.

Case Epilogue

Going forward, People's Bank plans to continue its aggressive pursuit of broader and deeper integration, with IBM MQSeries playing the linchpin role. One of the first examples of this will be the integration of the branch-based teller systems into the bank's common-connection architecture, allowing tellers to access the same range of data accessed by the online banking system. Other functionality improvements on the horizon include the ability for the bank's online customers to access their accounts through wireless devices—a capability seen as a key functional benefit of the bank's n-tiered architecture. What's more, the development team is expected to soon complete work on a platform that allows the bank's online customers to communicate with the bank via Lotus Domino. The bank, a longtime corporate user of Lotus Notes mail, saw the opportunity to extend its secure messaging capability to its customers via Lotus Domino. In doing so, the bank not only provides better service, but also reduces the cost associated with its previous, less secure customer messaging platform.

"It was clear to us from the outset that the IBM team didn't simply view us as another engagement—they were without exception committed to our success."

— Carol Anderson

Looking back at her company's experience in the first phase of the project, Anderson points to the professionalism, enthusiasm, and experience of the IBM team as its strongest virtues. "It was clear to us from the outset that the IBM team didn't simply view us as another engagement—they were without exception *committed* to our success," says Anderson. "Because of our investments in world-class e-infrastructure—and because of the IBM expertise embedded in that infrastructure—we are now better positioned to compete with even our largest rivals."

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