



POSTBANK

SUN AND MACALLA SOFTWARE HELP POSTBANK USHER IN NEW ERA OF MOBILE BANKING

KEY HIGHLIGHTS

Company

Postbank

Industry/Market

Retail Banking

Customer Environment

- Two Sun Enterprise™ 10000 servers
- 10 Sun Enterprise 220R rack-mounted servers
- Solaris™ operating environment
- Sun™ Cluster software environment
- Oracle® database
- iPlanet™ Directory Server
- J2EE™ technology-based application server
- IBM MQSeries messaging

Key Business Challenges

- Become the first Dutch bank to offer fully integrated mobile banking and integrated call credit services to consumers
- Design scalable application capable of handling up to 500,000 customers from day one at 99%+ service levels, and up to 7 million customers thereafter.
- Design first retail banking application relying on real-time processing

Key Business Solutions

- Macalla Mobile Commerce Platform
- J2EE™ technology platform
- Sun multi-domain server architecture and clustering solutions

Key Business Benefits

- Maintains reputation of innovation
- Maintains customer loyalty and builds platform for growth through transition to mobile banking
- Provides platform for support of further innovative applications throughout the ING group

“We came away very impressed by how well our m-banking system has performed on the Sun Enterprise™ 10000 server.”

*Martijn Gribnau
Manager, Internet Competence Center
Postbank*

One of the biggest potential “killer apps” for mobile computing platforms is banking. As one of the largest retail banks in the Netherlands, Postbank looked to mobile technology as a natural extension to its over 7 million account holders. “We were seeking to maintain our image as banking innovators,” according to Geert van Spronsen, member of the board at Postbank. “This would be a great way to retain and grow our customer base.”

Postbank wanted to get its m-banking initiative right the first time. And it aimed to get its new m-banking program on line within a very strict six-month timeframe, structured on sound commercial principals. This was required in order to take advantage of a summer savings campaign that would give away free mobile phones providing access to this new banking service. The goal was a huge challenge, given the scale of the deployment, and the fact that this would be Postbank’s first true real-time banking application.

Postbank looked to Sun, its established e-business platform, and a team comprised of CMG Finance BV, a systems integrator, and Macalla Software, whose Mobile Commerce Platform offered a scalable, Java™ technology based solution that was truly platform-independent. “Macalla was the only one to offer an off-the-shelf solution, and it was the only one that supported Java technology,

our e-business programming standard,” said Postbank’s Martijn Gribnau, Internet Competence Center Manager, who was responsible for the m-banking channel.

On July 15, 2001, Postbank, in cooperation with a large mobile communications carrier, became the first Dutch bank to introduce m-banking services, and in the first three months, has processed over 1.4 million transactions at 99%+ service levels. The system, which also is used for “top-up” prepayment of mobile calling time, was completed thanks to the work of Sun, Macalla, CMG Finance BV, PinkRocade, ING-ITC (Information Technology Centre), and Cap Gemini Ernst & Young. “We had an unbeatable team that truly delivered,” said Gribnau.

Extending the Market

As one of The Netherlands’ largest retail banks, Postbank does not have a huge brick and mortar branch network. Instead, Postbank has built its large market presence through a huge telephone banking operation, whose call centers are staffed by over 1600 people. Furthermore, the bank has also built up a large Internet banking presence and is continuing to explore other communications channels. Therefore, adding m-banking was highly consistent with Postbank’s multi-channel retail strategy.

“We wanted to be the first mover among Dutch banks, since we were aware that our direct competitors were also thinking about mobile banking,” according to van Spronsen.

Postbank planned to introduce the m-banking program in time for the 2001 summer holiday season. Because most Dutch salaried workers are issued holiday bonuses in late spring, the vacation season has always been prime time for the introduction of new retail banking promotions and products. Traditionally, most summer promotions are planned the previous fall. For ambitious efforts like Postbank’s m-banking initiative, that left very little time. “By the time that we decided on the m-banking program in late 2000, we knew that we didn’t have time to implement this project in a traditional way,” said Gribnau.

Sun Enterprise 10000 server provides scalable, mirrored platform for Postbank’s first real-time consumer mobile banking and integrated pre-paid call credit application.

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Not only was project lead time short, but the stakes were enormous. Because the bank served a huge customer base, the system had to be designed for scalability. “While most banking products can be gradually scaled up, in this case, within the first couple of weeks, we expected to get 500,000 customers,” said Gribnau, who added that the system would likely encounter peak loads from the start, as new customers signed on, just for curiosity. “There would be no second chance. We had to get this right the first time.”

There were other technical hurdles to manage besides scalability. For starters, said Gribnau, this was one of the first Postbank retail banking systems that would rely on real-time processing. Furthermore, Postbank was targeting a market with a technology that was still evolving. “With the competition between WAP and future alternatives, like wireless PDAs and broadband technologies like GPRS, we had to make sure that our m-banking system would be device-independent,” noted Gribnau.

Choosing the Mobile Platform

From the start, Postbank decided that the m-banking solution had to be off-the-shelf and standards-based. “We did not want any solution that would force us to maintain proprietary interfaces,” said Gribnau. Though the proposed system was complex, choosing the solution was surprisingly simple. According to Gribnau, Dublin, Ireland-based Macalla Software provided the only open off-the-shelf alternative.

“Because of our extensive experience in deploying mobile commerce platforms incorporating payments and alerts capabilities for banks and mobile operators, we were able to understand and respond quickly to Postbank’s requirements,” noted Jerome O’Flaherty, Macalla’s Chief Technical Officer.

The Macalla Mobile Commerce Platform provides a component-based application platform that delivers secure transactional and informational services to multiple devices across wireless, Internet, voice and interactive digital TV channels. Based on the Java™ 2 Platform, Enterprise Edition (J2EE™), the Macalla Mobile Commerce Platform provides a robust secure payments server, and personalized messaging server, plus other modules that handle communications to multiple end user devices. Integration with back end applications, and client-side message decryption and display are also provided.

With the Macalla Mobile Commerce Platform, Postbank could keep its options open regarding which end user devices to target, while providing a component-based platform that supported rapid development, ease of upgrade, massive scalability, and open interfaces.

“Java technology helps us construct an approach that is as open as possible,” according to Karl Jordan, Director of Strategic Alliances for Macalla, who added, “Our mobile commerce platform takes full advantage of standard Java technologies. For instance, client interactions within the platform are handled through the use of Java servlets. Additionally, Java servlets and JavaServer Pages™ (JSP™ pages) are used for rendering client displays and specifying security protocols.”

According to Macalla’s O’Flaherty, this architecture enables the Macalla Mobile Commerce Platform to take advantage of J2EE’s scalability. “Because servlets sit within the J2EE environment, our applications can easily take advantage of appserver functions such as load balancing and failover by using industry-standard interfaces,” he said.

This was a huge plus, according to Gribnau. “The fact that the Macalla Mobile Commerce Platform was based on J2EE standards was important to us,” he said, noting that Postbank already had a strong Java technology knowledge base within its IT organization. Furthermore, the fact that the Macalla Mobile Commerce Platform ran on Sun platforms was another key advantage. “We have been using Sun Enterprise™ 4500 servers for our Girotel Internet banking application for several years, and have been very happy with the reliability and performance,” said Gribnau.

The Heavy Lifting

Postbank worked closely with CMG and Macalla to develop a scalable application that would work right the first time. A core infrastructure was already in place to provide reliable service for Postbank’s existing Internet banking projects, which included:

- Two Sun Enterprise 10000 servers, with 36 and 32 CPUs respectively, deployed in a mirrored configuration with 5 processing domains apiece, for handling the Oracle® transaction database;
- An iPlanet™ LDAP Directory Server and other application-level processes for handling authentication and business logic access;
- Sun Cluster software for providing availability and reliability to the existing services;

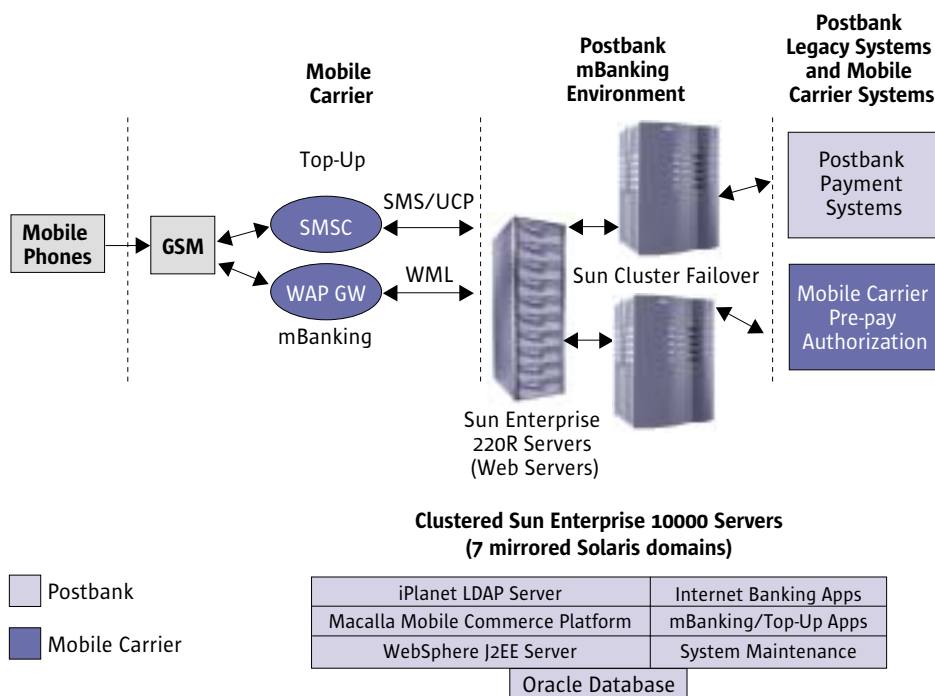
Ten rack-mountable Sun Enterprise 220R servers were used as web servers and for functions such as encryption.

“We used the Sun web server machines because they provided just the right power and memory requirements that we needed,” explained Gribnau.

For this project, 12 additional CPUs configured as two new processing domains on each Sun Enterprise 10000 server, were added to host the components of the Macalla Mobile Commerce Platform, the IBM WebSphere application server, and the Postbank m-banking applications.

“We placed a lot of resources to develop the necessary load balancing, clustering, and failover to support this system,” said Gribnau. There were other hurdles. For instance, although the new Solaris™ operating environment could handle advanced 64-bit processing, the project team decided to implement 32-bit to ensure that back end components, including WebSphere and MQSeries, could function properly. Furthermore, although the system had ample capacity to handle anticipated loads, the Macalla Mobile Commerce Platform server was configured to avoid network overload.

Through stress testing, the project team grew assured that their part of the system could easily handle the load. “Our questions were over the mobile networks, because WAP gateways were not the most stable part of the infrastructure,” noted Gribnau.



Postbank m-banking system architecture

Overwhelming Demand

The new service was designed to offer mobile access to Postbank's retail banking services, the mobile operator's pre-paid call credit facilities, along with mobile services from Genie, BT's mobile Internet portal. To start the service, Postbank and the mobile carrier offered their customers a free, specially preconfigured Siemens M35i Internet enabled phone.

"This project was an excellent example of a collaborative approach between a financial institution and a mobile operator. The Macalla Mobile Commerce Platform, based on Java™ technology and open interfaces, provided the essential infrastructure for such a business model."

*Karl Jordan,
Director of Strategic Alliances*

With Postbank scheduled to go live in mid-July, it began promoting the system in late May to build up public interest in the new technology. The country showed great enthusiasm for mobile banking, with demand for the service proving much stronger than expected. "Although we planned for 500,000 handsets, we received over 640,000 requests to our initial offer," recalled Gribnau.

The service combines encrypted SMS messaging and WAP, which is used for delivering secure banking services, including bill payment, funds transfers, account balances, and stock prices. In the near future, Postbank plans to add new services such as securities trading. At the heart of the system, the Macalla Mobile Commerce

Platform launches a series of secure instructions between Postbank's and the mobile carrier's enterprise systems, authenticating the customer, verifying the customer has sufficient funds, and then completes the transaction.

Aside from a few minor opening day disruptions, the system has delivered the promised service levels since going live in mid summer. "We came away very impressed by how well our m-banking system has performed on the Sun Enterprise 10000 server," said Gribnau. The Macalla architecture turned out to be the right solution for the problem, according to Macalla's O'Flaherty. "This project validated our distributed architecture, and proved the scalability of Java technology," he said. Macalla's Jordan added, "The Macalla Mobile Commerce Platform provided the essential infrastructure that enabled a financial institution and mobile operator to undertake a real collaborative business approach."

Since going live, the m-banking system has processed over 1.4 million transactions. For the bank, the system delivers valuable new services that could reduce customer churn, and in the long run, add a new low-cost channel for serving customers. For the mobile network operator, the venture increased its Dutch subscriber base by 50%.

Mobile banking provided "tremendous improvement in cost effectiveness," said van Spronsen, who added, "By offering m-banking, we will be able to add and consolidate our banking channels. This was the toughest project in my life. There was a lot at stake and very high security issues," he noted, concluding, "We have made a revolution in banking services."

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