Microsoft Windows Server 2003
Customer Solution Case Study

Association of Serbian Banks Reduces Gyro Clearing of Cheques to Less Than One Hour

Overview

Country or Region: Serbia
Industry: Financial services

Customer Profile

The Association of Serbian Banks (ASB) offers expert assistance to its 50 member banks and encourages development of a uniform approach to Serbia's financial and interbank IT systems.

Business Situation

The Serbian economy is highly reliant on cheques as a payment method. However, the market lacked an automated cheque-clearing solution. Processing cheques took up to two weeks, which was having a serious impact on cash flow.

Solution

Following a consultation period with Microsoft, the ASB, in partnership with integration company Saga, began work on a new gyro cheque clearing architecture based on Microsoft® BizTalk® Server 2004 and Microsoft BizTalk Accelerator for SWIFT.

Benefits

- Reduction in cheque processing time
- Long-term scalability guaranteed
- Rapid implementation saves time and money
- Substantial reduction in human error

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Milovan Pesic, IT Consultant, Association of Serbian Banks

In 2003, Serbia's payment system underwent a transformation. The National Payment System Services (SDK) was dissolved, and payment system services were assigned to individual banks. The Association of Serbian Banks (ASB) needed to organise automatic gyro clearing of cheques. To automate the process, the ASB introduced a clearing system based on a service-oriented architecture, using Microsoft® BizTalk® Server 2004 and Microsoft BizTalk Accelerator for SWIFT. Using the new solution, all elements necessary for cheque processing transactions are contained within the central clearing system; therefore, banks are able to process billing on the same day the transaction occurs. As a result, gyro clearing of cheques has been cut from two weeks to less than one hour, improving market liquidity and bringing substantial efficiency gains to the market.

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Situation

In 2003, the Serbian payment system underwent a major transformation. The National Payment System Services (SDK) was dissolved, and individual banks were given direct control of the market's payment systems.

As part of this reform, the Association of Serbian Banks (ASB) sought to garner efficiencies in the gyro clearing of cheques. This was viewed as extremely important owing to the market-wide reliance on cheques as a payment vessel.

The National Bank initially devised a small scale solution aimed at satisfying the immediate needs of its clients. It hoped that this solution would serve meet clients requirements until a third-party could build a more comprehensive solution.

Unfortunately, this ad hoc solution was unable to satisfy the large cheque clearing banks. Because cheques were regularly submitted to the issuing bank using couriers or mail services, huge delays were not uncommon. Not only did cheques get lost in the post, but when they finally arrived, all cheque details had to be manually entered and processed.

It took eight days for cheques to be processed, and due to unforeseen delays, finances often lay static for 10 to 15 days. This had a worrying impact not only on working capital, but on market liquidity as a whole.

Clearly, a new system was required, whereby the bank receiving the cheque could enter the cheque details into a gyro clearing message, thereby avoiding delays, eliminating errors, and accelerating the process.

Milovan Pesic, IT Consultant from the Association of Serbian Banks, says: "We needed a faster, more efficient system where a bank could receive an electronic version of a cheque and would automatically be able to process each receivable at the same time."

Solution

Following a consultation period with Microsoft, the ASB began work on a new architecture for the gyro clearing of cheques. As the ASB is non-profit organisation, it was reluctant to burden its members with the costs of this project. As such, system integrator Saga was employed to handle the implementation. Saga agreed that in the initial phase of project, it would cover all costs related to hardware and software. For its part, the ASB would provide the premises, communication infrastructure, and qualified staff for the operations, and all necessary legal documents.

In addition, as part of the contract on strategic cooperation with Saga, Microsoft® Consulting Services (CEE), a part of the local Microsoft office, actively participated in setting global standards in the work process methodology of the Saga programmer team.

Through the program, the progress of the project and the deployment of the product were closely monitored by Microsoft, and product features were enhanced. As Saga was participating in the Microsoft Adaptor Program (TAP), the project team also had access to Microsoft's internal product development resources and participated in Microsoft activities targeting application developers.

Zlatko Jegdic, General Manager of the E-Business Department at Saga Belgrade, says: "We identified Microsoft BizTalk® Server 2004 and Microsoft BizTalk Accelerator for SWIFT as the ideal solution to speed up

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The organisation was particularly impressed by the fact that BizTalk Server 2004 had been awarded the SWIFTReady Financial Enterprise Application Integration (EAI) Gold label last year. The label confirms Microsoft's belief that its solution provides financial institutions with a cost-effective way to transfer payments and securities transactions, improve partner connectivity, and improve operational efficiencies.

To ensure scalability in the future, the ASB required the messaging system to be based on the SWIFT standard, thus allowing for additional functionality–such as the clearing of payment orders and the easy addition of direct debit at a later date. The ASB required a high performance, reliable, and scalable solution, and Saga began developing the platform in close partnership with the Microsoft Technology Centre (MTC) for Europe, Middle East, and Africa (EMEA).

The MTC's close involvement in the project proved its value on many occasions. Not only was the ASB able to save both money and resources on the testing and development of the solution, but the MTC also assisted in the direction of the development and possible alternative solutions. Furthermore, it was able to demonstrate new tools and different approaches that helped enrich the development potential of Saga.

The new clearing system is based on a service-oriented architecture and utilises the power of BizTalk Server 2004 and BizTalk Accelerator for SWIFT to automate the messaging process. It consists of two subsystems—clearing and transport:

The Clearing Subsystem

The new cheque clearing system is recognized as being an Automated Clearing House solution, the first of its kind based on the latest Microsoft technologies. Validations of incoming messages are dealt with at the core of the clearing subsystem along with account balance calculations and net calculations based on electronic instructions. BizTalk Server 2004 and Microsoft SQL Server™ 2000 allow the implementation and management of business processes that unify various applications and systems into an integral whole. BizTalk Server 2004 provides a reliable system for message exchange between various applications based on the XML standard, as well as a robust system for orchestration of business processes, and the support for lengthy transactions.

The Transport Subsystem

With a budget of €1 million (U.S.$1.2 million), the ASB required a system that could be quickly and easily implemented and maintained, scalable, and secure. Microsoft was able to offer a security infrastructure based on industry standards with "cross-platform" support.

The transport subsystem provides participants in the clearing system—banks, clearing institutions, and the central bank—with a secure, reliable, and efficient message exchange architecture. Fundamentally, it has to accept messages in SWIFT format and validate the messages' accuracy. At present, it uses the standard SWIFT format but can also be configured to run XML format depending on system parameters.

In addition, it had to:

- Digitally sign the message.
- Send the message to the relevant Web service in a clearing institution using Simple Object Access Protocol (SOAP).
- Provide acceptance of messages sent by a clearing institution.

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At the other end of the system, the transport infrastructure had to provide the clearing institution with verification of the digital signature of the bank, based on the received BIC code.

In addition, the clearing house required the transport subsystem to:

- Send the message to BizTalk Server for further processing.
- Send the outgoing messages in SWIFT format to banks.
- Send the messages in SWIFT format to the real-time gross settlement (RTGS) system of the Central Bank.
- Provide acceptance of the messages in SWIFT format by the RTGS system of the Central Bank.

With this solution in place, the ASB can be confident that all messages are pre-validated by the bank, for example, messages are in SWIFT format. In addition, the bank can also add the ordinal number of the session and ordinal numbers of the message. The messages must be digitally signed by the bank and the signature verified on the server end.

Benefits

Cheque Processing Time Cut by Two Weeks to Less Than One Hour

The new clearing system has had a profound impact on efficiency, reducing the time to process cheques by two weeks. As a result, market liquidity has improved, and companies will benefit from improved working capital.

Pesic says: "In the past, retailers brought their cheques to their banks, and the banks would enter a message in a particular SWIFT format (but only in an aggregate way). This significantly restricted cash flow. For example, if the daily turnaround was €300 million (U.S.$363,500,000) this fell to €120-€130 million during the clearing process."

A Long-Term, Scalable Solution

The architecture of the transport component is based on a client/server model, whereby communication between the client and the server is synchronised. However, in future versions, the transport component will be broadened to include Web Service Enhancements (WSE) 2.0 improvements to integrate both directions of communication. This will allow additional communication options and protocols to be added when required.

Since SWIFT has been introduced as the standard for all message exchanges, the new infrastructure is suitable for other banking transactions. "Now that an exceptional communication infrastructure has been put in place, we intend to gradually start processing other tasks," says Pesic. "These will include interbank markets of all types, including the repro market and gyro money market, which are very important and still underdeveloped here."

According to Pesic: "BizTalk Accelerator for SWIFT will offer ASB the complete set of schemas for all SWIFT FIN messages, including Microsoft Office InfoPath™ 2003–based entry and repair templates. They will be able to support SWIFTNet connectivity modes via SWIFTAlliance including FIN, InterAct, and FileAct to extend the reach of their financial messaging platform."

The third and most significant phase of the implementation will involve integrating the entire Serbian clearing system with the technology developed by Microsoft and Saga. Once this has been achieved, approximately 9 million messages will be processed each month.

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Rapid Implementation Saves Time and Money

The ASB required a system that could be quickly and easily implemented.. "Seamless integration of Microsoft Visual Studio® .NET and BizTalk Server 2004 increase developers' productivity by simplifying the programming efforts and leveraging their existing skillset," says Jegdic.

With the support of the MTC, implementation took just four months. Furthermore, the costs of using the new system decrease with the increasing numbers of messages processed.

BizTalk Server 2004 and Visual Studio .NET 2003 development system have been tightly integrated to provide Microsoft Enterprise Application Integration (EAI), Business Process Management (BPM), and Trading Partner Interaction (TPI) development and run-time platform. Accelerator for SWIFT (A4SWIFT) extends the BizTalk Server 2004 platform to provide the most comprehensive, reliable, and secure delivery of financial messaging. According to Sheida Hadji-Ashrafi, Industry Manager for Financial Messaging, Microsoft EMEA: "All financial institutions need to be able to send and receive SWIFT messages. Technically, this requires the ability to take a message from the core processing system in its native format, convert it to SWIFT format, and route it to the SWIFT network (and to reverse the process to receive messages). This should be accompanied by validation, auditing, and logging. This is all Accelerator for SWIFT is about."

Eliminates Human Error

The new system also means that there is reduced opportunity for human error due to increased automation and standardised communication. "A cheque is entered only once, and all transactions are conducted based on the single entry. Also, clearing transaction cycles are now available as needed, as opposed to the previous solution where operations were limited to only one time-fixed cycle per day," says Pesic.

Box Out

BizTalk Accelerator for SWIFT will offer ASB the following capabilities:

- The complete set of schemas for all SWIFT FIN messages, including entry and repair templates based on the Microsoft Office InfoPath 2003 information gathering program. SWIFT XML messages can be deployed as needed using standard BizTalk features.
- SWIFTNet connectivity modes via SWIFTAlliance, including FIN, InterAct and FileAct.
- Interactive connection to the SWIFTAlliance Access using MQSeries (MQSA), file connection using Automated File Transfer, and certification by SWIFT for Financial EAI 2005.
- Easy implementation of Market Practice Groups initiatives, including alternative validation sets and versioned schema, to support the needs of special groups.
- Support for compliance with Straight Through Processing (STP) guidelines, best business practices with regard to messaging by enforcing rules, and allowance of further rules to ensure the most automated processing possible.
- Validation of outgoing messages against the syntax definition of SWIFT messages, including the set of network validation rules present in the SWIFT User Handbooks, market practices, and specific business solutions templates.
- Well-validated messaging for both outgoing and incoming traffic, and an enforcement of the validation no matter what the source of the message (application or manual generation).

For More Information

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