



## Delta Lloyd reacts quicker to changes in front applications thanks to .NET 3.0 SOA-architecture



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Delta Lloyd Bank closely follows the evolution of technology. The bank has wanted to migrate from Visual Basic 6 to a .NET-infrastructure from the moment the Microsoft .NET-platform became *mainstream* and the technology made it possible to work with a *multiple document interface* (MDI). This change would increase the stability and flexibility of the applications and ease the communication between the central and decentralized software. Together with IT partner Ordina, Delta Lloyd Bank Belgium opted for a SOA/BPM Reference Architecture on the basis of Microsoft .NET 3.0 in 2003.

Thanks to the service oriented working method, Delta Lloyd Bank Belgium can now quickly design applications and flexibly adjust them with the aid of reusable web services and explicit, visual business processes. Applications for the sales points are now written in C# using Windows Workflow Foundation (WF) for the BPM aspect and Windows Communication Foundation (WCF) for the web services aspect.

To that purpose Ordina and Delta Lloyd Bank Belgium built a professional reference framework in .NET 3.0. Thanks to the phased migration to this technology, the front-end application of the bank, Delta Retail, could continue to work in one user interface.

## Outline

**Country:** Belgium

**Sector:** Bank

### Profile

Delta Lloyd Bank Belgium came into existence in 2001 as a result of a merger of the Bankunie and the Bank van Limburg; taking over Bank Nagelmackers later on. The retail activities of Bank Nagelmackers were integrated in 2002 and Bank Nagelmackers Private Banking followed in 2005. The bank provides services to businesses and private individuals and provides jobs for around 1.500 people, both direct employees and freelance agents.

### Challenge

Delta Lloyd Bank Belgium pays a lot of attention to the evolution of technology, leading to the decision in 2007 to migrate to Microsoft .NET 3.0. It wanted to increase the stability and flexibility of its applications and ease communication between the applications. By reusing the development code the bank wanted to react quicker to changes in its competitive sector.

### Solution

IT partner Ordina suggested the SOA/BPM Reference Architecture Microsoft .NET 3.0. The new environment has a modular construction, which makes it easier to synchronise the different channels. Applications are now written in C#, with Windows Workflow Foundation (WF) for the business process layer and Windows Communication Foundation (WCF) for the web service layer.

### Voordelen

- better communication with the rest of the business
- better view and control over the business processes of the ICT architecture
- local and central applications are better synchronized with each other
- quicker development from concept to implementation
- better interoperability and integration thanks to standardized WCF-services
- updates and maintenance are carried out simpler and faster
- existing functionalities can be reused and double work avoided thanks to web services
- new people are deployed quicker thanks to the very clear reference architecture
- smoother automated testing of components by way of unit testing in Visual Studio 2008

**D**elta Lloyd Bank Belgium came into existence in 2001 as a result of the merger between the Bankunie and the Bank Van Limburg. Bank Nagelmackers was integrated in two phases in 2002 and 2005. Delta Lloyd Bank Belgium provides services to businesses and private individuals. A series of mergers, takeovers and newly beginning sales points gave the bank very strong growth over the past several years. Today Delta Lloyd Bank Belgium counts some 1.500 employees and around 270 sales points: 105 offices, mostly in cities, and 165 independent agents.



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**Bart Calders, Development Front Office Informatica at Delta Lloyd Bank Belgium**

In order to support this growth, the IT service had to equip employees with powerful software. Delta Lloyd Bank Belgium therefore continues to build its applications with reference technologies. “We follow technological developments closely. New technology helps us react quickly to new needs”, explains Bart Calders, Manager Development Front Office IT at Delta Lloyd Bank Belgium. “In 2007 we decided to renew our existing architecture. Our existing Visual Basic 6 based development environment had provided excellent service, but it was time to evolve to Microsoft .NET, which had become *mainstream*. We simultaneously wanted to make software development more flexible, as the banking world is a very competitive one. It is for this reason that we have to be able to react quickly to changes in banking processes. If we launch a new product or change an existing one, we the IT department must be able to quickly offer all necessary support. After all, every change has consequences for our ICT programs. We also wanted to introduce more structure to our software architecture and increase the synchronisation between the back office and front office applications.”

The internally developed DeltaRetail application for example, which supports the sales assistants’ commercial tasks in the sales points, developed quite a number of new options over the past few years, and was adjusted to new products of Delta Lloyd Bank Belgium. These new options and the underlying processes were developed with the aid of Visual Basic 6. Delta Lloyd Bank Belgium wanted to upgrade the application to the new .NET development environment. “The building blocks with which we develop applications, the business web services, had to be independent of the front-end”, continues Bart Calders. “In that way we could use them for different applications. Online banking could for example make use of these web services later on.”

### Enabling communication between the most diverse applications

Delta Lloyd Bank Belgium opted for a SOA (Service Oriented Architecture)/BPM (Business Process Management) Reference Architecture on the basis of Microsoft .NET 3.0. From now on the bank writes its applications in C#, utilizing Windows Workflow Foundation (WF) and Windows Communication Foundation (WCF). The latter can be used to detach the functional interface from the underlying implementation layer. Fixed guidelines for analysis and development of web services, Microsoft’s Web Services Software Factory and .NET Framework technology such as WF, will considerably shorten development time. IT partner Ordina and Delta Lloyd Bank Belgium together built a recognizable reference framework in .NET 3.0. Ordina trained Delta Lloyd Bank

Belgium developers in the use of .NET 3.0 and supported the developers in the creation of the first applications in this new environment.

“Thanks to our SOA architecture, we can now better define the different application layers”, says Bart Calders. “The advantage of web services is that we can reuse existing functionalities, and thereby avoid doing double work. Even at the analysis stage we carefully consider SOA: architects have a list of the existing web services of which the names



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**Kurt Claeys, .NET Solutions Architect and Trainer at Ordina**

are strictly standardized. We can then use these building blocks in a new workflow. Communication between the analysts is improved and architects can efficiently develop new applications. Even the most diverse platforms work together thanks to WCF, and that interoperability is a very important advantage.”

### A partner with know-how

At the beginning of 2007 Delta Lloyd Bank Belgium began conducting a preliminary investigation into taking concrete steps toward a new development environment. The bank invited a number of companies and chose Ordina. “Because they offered the best solution and were already very familiar with our organisation and front-end application”, reasons Bart Calders. “They have been a partner since 2002, which does not however mean that we would automatically work with them in the construction of the new architecture. It is after all unwise to only look at one solu-



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**Bart Calders, Development Front Office Informatica bij Delta Lloyd Bank**

tion: you have to take a look at what the other parties have to offer. Ordina simply offered what we were looking for however. We wanted a framework in a SOA environment with which we could develop applications. Ordina does not offer ready-made solutions without offering the necessary support. They have experience with projects for large organizations and have strong know-how, partly thanks to their .NET competence centre.”

“That is an important advantage”, adds Kurt Claeys of Ordina. “Our software engineers and architects work on projects for different clients, with which they gain a lot of relevant experience. That provides an interesting interaction. When we began the project here, we first determined what the need was, what knowledge existed, and who needed what training. We proposed a clear transitional route in which the developers would receive training in .NET 3.0 by Microsoft Certified Trainers of the Ordina Academy. We simultaneously mapped out the needs of the new reference architecture together with Delta Lloyd Bank Belgium. Ordina constructed a framework to support this architecture, analysed the first application and developed the necessary web services and processes in WCF and WF. The framework was given the name SOPRA (Service Oriented Process-driven Reusable Application). We subsequently trained the Delta Lloyd Bank Belgium development team in this new environment by way of a guided analysis phase for the second application. We processed the feedback we got from these developers into the framework. This provides Delta Lloyd Bank Belgium with a perfect implementable architecture and framework in which the results are immediately apparent. “

Via a *proof of concept* Ordina proved that a phased transition from the VB6 applications to a .NET 3.0 based SOA/BPM architecture was possible, due to, amongst other

things, the interoperability between VB6 and .NET applications. This was very important as a complete about-turn carried too many risks for the DeltaRetail application at Delta Lloyd Bank Belgium.

“We consciously opted for a Microsoft solution as our entire front-end is already based on the Microsoft platform and we are very satisfied with it”, says Bart Calders. “The developers are also very familiar with Microsoft and that makes it advantageous to switch over to .NET. The availability of .NET developers in the market is an important factor.”

### **Enthusiastic developers work much faster**

Thanks to WCF and WF, developers at Delta Lloyd Bank Belgium now occupy themselves with functionalities instead of with the underlying infrastructure and technology. The business process is analytical, explicit and taken out of the code. “Our developers are enthusiastic about working with it”, says Bart Calders. “And new employees are easier to deploy thanks to the very clear architecture. There are after all clear guidelines that determine how you use the web services.”

### **Adjusting to decisive rules**

New rules and products are appearing with increasing speed. Thanks to WF minor adjustments are made quickly at Delta Lloyd Bank Belgium nowadays: the basic workflow remains the same after all, only the rules change, the workflow business rules. WF is a good basis for working with those rules. Bart Calders gives a number of examples: “When we process a new bank card for someone, we first have to check whether that individual is creditworthy. He must for example have a minimum amount in an account. We configure this through a *WF business rule*. If tomorrow it is decided to change one of the conditions, then the workflow remains the same while the rule is adjusted.” It suf-

## For further information

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**For further information about Ordina, phone +32 (0)16 27 00 80 or visit <http://www.ordina.be>**

**For further information about Delta Lloyd Bank Belgium, visit <http://www.deltalloydbank.be>**

## Software and Services

### Servers

#### Developer Tools

Microsoft Visual Studio  
2005/2008  
Team Foundation Server  
.NET Framework 3.0  
(communication foundation,  
workflow foundation)  
Web Service Software Factory  
Modeling Edition

### Windows

Windows XP  
Windows 2003

## Partner

Ordina

fices to only modify the configuration of a WF business rule, not the code, and you're done.

"It is still difficult to estimate how much time we will gain with this, given that we have only just begun", continues Bart Calders. "We focus on the analysis: right from the design stage we, together with the project owner, carefully established the "contract" of the various web services. You can also truly predict the process in advance in a SOA/BPM approach. During the analysis phase we take the already existing building blocks and web services into consideration. By reusing these building blocks, we will be able to finish the projects faster. What is sure is that we will gain time and therefore be able to satisfy the needs of the business quicker."

## Find and eradicate mistakes and performance problems easier

From the very start Delta Lloyd Bank Belgium paid ample attention to error management and problems. Thanks to the new ICT architecture the error percentage in newly developed applications will decrease significantly. This is because automatic tests were planned into the web services during the development phase. "We can trace bugs quicker and also receive better indications about the quality of our concept", says Bart Calders. "The framework is constructed in such a way as to enable us to quickly track down mistakes or delays on every level. We quickly see which service is experiencing a problem. It then suffices to re-examine and optimize that part only. This results in the increased quality and reliability of our software."