



## DFDS SEAWAYS DESTINED FOR INCREASED EFFICIENCIES BY USING SOA AND BPM

### Challenge

The company's homegrown, monolithic Enterprise Resource Management (ERP) system was built on outdated client/server technology. Its 200-plus sub applications used one underlying database but they lacked functional integration. User interfaces differed greatly. Data had to be re-entered regularly. Finding resources to maintain the system's front ends had become increasingly difficult.

### Solution

Using the webMethods suite, DFDS Seaways is on the road to major cost savings. The company subdivided the old system's functionality into a series of logically ordered sub functions—for instance, for transport management or invoicing. That functionality was provided by standard software packages, which were integrated via the webMethods Enterprise Service Bus (ESB).

### Benefits

- Higher productivity, thanks to well-integrated functionality and modern interfaces
- Redundant data entry eliminated
- New functionality added easily without any one software package becoming uncontrollably large
- New standard packages much easier to maintain
- Performance problems resolved
- Operational costs decreased in areas such as terminal management



DFDS Seaways is a leading European ferry and logistics company. With operations distributed across Europe, DFDS Seaways transports more than 2 million ferry passengers and more than 1.2 million quay-to-quay and door-to-door movements per year. The company employs more than 2,200 people in 38 offices in 13 countries. Its vision is to be a leading, first-class, multi-modal short sea carrier.

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Johan Krijgsman | IT Architect | DFDS Seaways

## Big and outdated

DFDS Seaways transports people and goods between many different destinations within Europe, across road and water. To coordinate this massive transport of people and freight, the logistics company greatly relies on a central company information system.

That system is called Cosmos, built in-house as a transport management system back in the early 1990s. Its design was completely in line with techniques back then. Cosmos offered a one-off recording of as much data as possible in a database from Sybase. The functionality for the different business units and users was built on the Windows platform with Gupta tools.

It was a classic client/server system, explained IT architect Johan Krijgsman at the head office in Scheveningen. The ERP system continued to expand over the years to more than 200 smaller and larger sub applications.

That growing number of applications, however, led to growing problems. “The different applications were built spread out over a longer period of time,” Krijgsman said. “This resulted in a growing amount of problems for us after some time. Although all applications used the same database, it was not a matter of true integration. There were also more and more differences in the user interfaces of the different sub applications that users had to work with.

“Besides all of this, it was technically becoming increasingly more troublesome to house the new requirements and wishes of the business in Cosmos. This resulted in us finding more and more areas within the organization creating their own spread-sheets, as well as other solutions invented by users themselves.”

The complexity of Cosmos had, in some areas, become so great that DFDS Seaways faced growing maintenance problems. Documentation was often drawn up by people that had left the company a long time ago. A lot of business logics were recorded in so-called stored procedures, which made them hard to change. Although application performance for internal users was reasonable, DFDS Seaways on several occasions ran into problems with the Web front-ends—a roadblock to enabling customers to make reservations via the Internet.

## Which direction to take? Rebuild or use standard packages?

“At a certain point, we were confronted with the question of how to continue with Cosmos,” Krijgsman explained. “Were we going to reconstruct the existing system, or were we going to look for a new standard package?”

DFDS Seaways investigated several options. The first was rebuilding on, or migrating to, another technology platform, a difficult and risky operation. “This would also mean that we would then be stuck with the same functional structure of the original application, which would not be an ideal situation as we saw enough possibilities for improvement,” Krijgsman said.

Complete reconstruction was another possibility. But it would require building a complete new system—expensive, risky and requiring enormous development. DFDS Seaways also sought a standard package with functionality comparable to Cosmos. “That package simply did not exist,” Krijgsman said.

A final and what proved to be the viable option was dividing Cosmos into logically structured functional chunks. “With these chunks, it would perhaps be possible to use standard packages, although only for a functional sub area each time,”

Krijgsman said. “We would then have to think of a way of enabling the various standard packages to work together.”

To assess this option properly, Krijgsman mapped out the architecture and application landscape in 2007, subdividing Cosmos into a number of logical sub segments and then checking to see if standard packages were available for them.

It quickly became clear that this was the best route for DFDS Seaways. Standard packages were indeed available for all functional sub areas and, if specific functionality was lacking, DFDS Seaways could provide it with additional custom work.

## SOA: the right course from the start

DFDS Seaways ended up on the path of a Service-Oriented Architecture (SOA) naturally. “In the beginning of the course of replacing Cosmos, we had only barely discussed the issue of an SOA or an ESB,” Krijgsman explained. “We approached this route via the functional way. We defined a series of functional areas in our preliminary investigation. These have, in fact, grown into services that can communicate with each other via an ESB, and they, in this manner, form one consistent company information system.”

The company had several years of experience using webMethods Trading Networks, a B2B gateway based on the webMethods ESB. Via this technology, the company managed, for instance, the communication between parts of Cosmos and applications used by partners acting as ticket or freight space retailers.

“We thus already had experience with separately functioning applications that communicated with one another efficiently, without one application needing to be aware of the internal operating procedure of another program,” Krijgsman said.

DFDS Seaways applied the same principle when replacing Cosmos: standard packages that shield logically functional areas communicate based on SOA principles and via an ESB. Other services were defined within different standard packages when necessary, and they also communicate with other services and standard packages. Functionality is re-used in a simple manner.

“In order to replace Cosmos by a series of standard packages, all we had to do was purchase the webMethods Broker from Software AG, which regulates the message traffic across the ESB, a tool for designing and maintaining business processes and a solution via which we could manage all SOA services developed by us,” he said.

### Interfacing standard packages

By replacing Cosmos, daily operations will be more efficient. Because of the resulting business advantages, the DFDS Seaways IT board approved the necessary investments.

Two parallel operations began: the implementation of standard packages per functional area and acquiring knowledge of and experience with service-based integration and Business Process Management (BPM).

“We tackled the package selection together with an external partner,” Krijgsman said. “Once we complete the current projects, we will have replaced an estimated 80 percent of the Cosmos functionality by standard packages. It was essential in this case to have sufficient knowledge and experience at one’s disposal with regard to SOA.

“Software AG played an evident role in this matter. This company has helped us in setting up a so-called Integration Competence Center (ICC). This is the central area in DFDS Seaways, where we develop work methods aimed at integration,

managing services, developing interfaces, creating documentation, securing knowledge and so on. For us, the ICC is the central nerve center with regard to SOA, integration and process management within DFDS Seaways.”

Integrating different standard packages sometimes turned out to be custom work. “Not every standard package is of the same progressiveness,” Krijgsman said. “In some cases, the package that we selected was already completely set to work together with the outside world via the SOA principle. Yet in other cases, it still required necessary development work.”

### Destination: greater cost savings

Did the project entail only the replacement of an outdated package? “No, certainly not,” Krijgsman exclaimed. “We formulated a business case beforehand, which included very clear and well quantifiable advantages for the business organization. We are starting to realize these advantages.”

For instance, DFDS Seaways uses a new standard package by which it regulates the management of its terminal in Vlaardingen. An important function of the package is keeping track of freight. The company transports freight via so-called ‘roll-on, roll-off’ trailers that are loaded onto the ship in Vlaardingen and when they arrive in England, for example, they are transported to their final destination.

“An important question for us with regard to company economics is: where does a lorry driver put his trailer on our terminal terrain?” Krijgsman explained. “A smarter and more efficient set-out of these trailers by us will result in a faster boarding onto the ship. We can now fully optimize this process with the new terminal management system.

“The result of all of this is that we now minimize waste of fuel, as we do not have to drive across the terminal with trailers as much as before. This is financially attractive, and it is good for the environment, too.”

### KEY COMPONENTS

The **webMethods ESB** integrates standard software packages, enabling DFDS Seaways to replace its existing ERP system.

**webMethods Broker** provides high-speed message exchange.

**webMethods BPMS** harmonizes processes at DFDS Seaways.

**webMethods Trading Networks** provides a B2B gateway with trading partners.

DFDS Seaways also uses **CentraSite** for SOA governance.

## ABOUT SOFTWARE AG

Software AG is the global leader in Business Process Excellence. Our 40 years of innovation include the invention of the first high-performance transactional database, Adabas; the first business process analysis platform, ARIS; and the first B2B server and SOA-based integration platform, webMethods.

We offer our customers end-to-end Business Process Management (BPM) solutions delivering low Total-Cost-of-Ownership and high ease of use. Our industry-leading brands, ARIS, webMethods, Adabas, Natural, CentraSite and IDS Scheer Consulting, represent a unique portfolio encompassing: process strategy, design, integration and control; SOA-based integration and data management; process-driven SAP implementation; and strategic process consulting and services.

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