

## EGL helps NCB leverage existing expertise and systems to enable customer self-service

---

### Overview

---

#### ■ **The Challenge**

*As copyright registration requests increased, the amount of manual data entry required by NCB's existing system was beginning to become very time consuming. NCB needed to reduce the data entry workload on its own staff and become more responsive to its clients. At the same time, the company wanted to leverage its existing systems and development expertise, while taking advantage of the benefits offered by newer, open technologies.*

#### ■ **The Solution**

*NCB worked with consultants from IBM Business Partner Xact Consulting to Web-enable its copyright registration system. A small team of developers with limited Java experience used Enterprise Generation Language (EGL) to rapidly develop a Java- and Web-based solution that integrated with NCB's existing registration system.*

#### ■ **The Benefit**

*Total processing time for new registrations is expected to drop significantly. EGL's short learning curve, high level of abstraction, and automatic code generation resulted in substantial productivity gains, time savings, and on-schedule project completion.*

Headquartered in Copenhagen, the Nordisk Copyright Bureau, or NCB, is a Nordic-Baltic society that — in cooperation with copyright societies abroad — administers the copyrights in the recording and production of music in various formats on behalf of composers, lyricists and music publishers.

To effectively administer copyrights, NCB must first register all copyrighted material and enter it into its database. In the past, music producers would send the physical media, such as a CD or DVD, to NCB. Copyright employees at NCB would then read the cover and manually enter data into the appropriate database. While there were other methods of delivering the copyright information to NCB, ultimately each request required NCB staff to perform manual data entry.

Over time, the number of requests coming in began to overload NCB personnel, sometimes resulting in processing delays. Stephan Kristensen, project leader at NCB recalls, "At times, a producer might send 40 CDs in one day. We did not have the manpower to type them into the system the same day, so we had to spread them out over a period of time. It was clear that it would be much more efficient to distribute workload and allow our customers — the producers — to enter the data themselves through a Web site."

In addition to accelerating the registration process, NCB also wanted to increase responsiveness to customer needs by providing customers with access to NCB records. Bjorn Skat Petersen, IT Manager at NCB explains, "We wanted to implement self-service not only to reduce our manual data entry and costs, but also to allow our customers to get vital information that they previously did not have access to. For example, we wanted to provide them with immediate and continuous access to all of their existing copyright information."

## **A New Approach**

Having decided on Web self-service as an effective means of increasing customer satisfaction, streamlining its business process and lowering costs, NCB turned to Xact Consulting, an IBM Business Partner, to begin developing the new system called WebCover. Petersen notes, “We have a long history of collaboration with Xact. They have extensive expertise in IBM technologies, but as important, they know our business very well.”

In the 1990s, IBM and Xact built the client/server version of NCB’s copyright registration system using IBM VisualAge® Generator. For NCB, that project highlighted the advantages of using a high-level fourth-generation language (4GL) with automatic construction.

For the WebCover application, NCB wanted to build on that success while taking advantage of advances in 4GL technology. Specifically, NCB wanted to replace the GUI front end of the client/server system with a browser-based front end built using Enterprise Generation Language (EGL) and JavaServer™ Faces (JSF) technology. This would enable the company to Web-enable the system while reusing the back-end business and data logic previously developed under VisualAge Generator.

Torger Thevik of Xact, notes, “We have worked with NCB for several years and we know the systems very well. When we were approached by NCB to deliver the new WebCover

system, we suggested that they look into the JSF and EGL combination. We agreed that WebCover would be built using JSF/EGL in IBM WebSphere® Studio Application Developer.”

WebSphere Studio Application Developer is now IBM Rational® Application Developer for WebSphere Software. Originally developed with WebSphere Studio Application Developer, WebCover development will be migrated to Rational Application Developer.

## **No Java Experience Necessary**

The selection of EGL as a development technology was also motivated by NCB’s decision to maintain the WebCover application after it was developed. Although NCB’s IT department includes numerous skilled developers, none had any significant experience in Java development. EGL is specifically designed to help traditional developers leverage the benefits of the Java platform without getting bogged down in its details. EGL enables developers to build applications based on Java and Web technologies in a high-level programming language. EGL tools then generate Java code and other runtime artifacts, freeing NCB and Xact developers to focus on the business problem and not the complexities of the underlying implementation technology.

The WebCover development team consisted of two Xact consultants and one NCB developer. Petersen explains, “The system developer

from the NCB IT department was highly skilled in COBOL, VisualAge Generator and in NCB’s business, but she had very limited experience with Java and Web development. Though we don’t typically develop in object-oriented languages, we are familiar with object-oriented concepts. We found it is very, very easy to go from other languages to EGL. EGL provides us with a way to take advantage of Java and exploit all of its value without having to learn the details of Java.”

After two days of EGL training conducted by Thevik, the team was up and running. He explains, “Clearly not everyone was a highly skilled Web developer. But with EGL, we are shielded by the technology — we did not have to worry about all the protocols and communication details. That is why the team could be productive very fast. With JSF/EGL, the transformation of skills is rapid — going from a traditional GUI developer to a very good Web developer is easy.”

## **Browser Interface Development Simplified**

NCB consulted with some of its customers on the design of the new browser-based interface before beginning to build the interface with JSF and EGL. Kristensen reports, “We contacted some external partners and showed them sketches of how we wanted the new design to look and what we wanted to offer them. They were positive in their response to the preliminary design, and we went forward from there.”

JSF is a set of Java classes and JSP tag libraries that provided the NCB and Xact development team with a framework for developing the WebCover Web application. It enables developers to drag-and-drop controls onto a page instead of having to handcode them. The integration of EGL and JSF produces an event-driven model that greatly simplifies the building of Web applications. “JSF/EGL is more productive way of developing the client-side programs compared to JSP coding. We had hoped that we could use our knowledge of building event-driven GUIs in developing the page handlers in the Web interface. And in fact, that is what JSF/EGL is all about. JSF and EGL in combination are very powerful,” says Thevik.

Kristensen agrees, “It is much easier to build good user interfaces using JSF/EGL compared to creating JSPs.”

### **Code Generation and Debugging**

Rational Application Developer and WebSphere Studio Application Developer automatically generate Java code from EGL, including optimized infrastructure code. Thevik has relied on IBM code generation technology for years. He notes, “I’ve grown up with these technologies and I trust them. I won’t go into a native language to build systems if I have a 4GL language to generate the code. In my experience, working with these technologies for the last 18 years, I have found that they are reliable and more productive. IBM code generation is robust. I’ve used Cross

System Product, VisualAge Generator and now EGL and I can’t remember any situation in which we have had any major problems with the code generated.”

Another key benefit of EGL development for the WebCover project team is that debugging is done at the EGL level, not at the Java level. This enabled the team to find and fix problems in EGL, in which they had gained proficiency, instead of having to first learn enough Java to effectively debug native Java source.

“We relied on the comprehensive debugger in VisualAge Generator for server-side development, and the debugger for EGL is also very good – with either tool we can debug at the 4GL source level.” says Thevik.

### **An IBM Deployment Environment**

NCB’s original copyright registration system, built with VisualAge Generator, incorporated IBM DB2® for information management and ran on an IBM iSeries™ server. With integration based on MQSeries®, WebCover leverages the existing server-side software. WebCover runs under WebSphere Application Server, also on an IBM iSeries platform.

Looking ahead, the team has started to build EGL Web Services which will be accessed using IBM Lotus® Notes® clients. Petersen notes, “One of the factors in NCB’s decision to move forward with EGL was that the integration with iSeries platform and other IBM technologies was in place and working very well.”

### **Delivered On Time**

The team of three developers completed WebCover application development on schedule, in just three months. “If we had used another approach and not JSF/EGL it would have taken us longer — probably much longer than we would like. Part of the time savings was a result of not having to worry about state handling. It is a pleasure to have the tools handle the state for you,” says Thevik. He adds, “If we absolutely had to get it done in the same amount of time then we would not have been able to deliver all the functionality or the same user interface as we have now.”

### **Streamlined Business Process**

EGL enabled the WebCover development team to rapidly deliver a Web-based application based on Java technology without having to delve into the details of Java-based development. Along with increases in productivity and efficiency, the team also realized significant time savings throughout the project. For example, Kristensen notes that the ability to test new functionality as soon as it is ready has been a key benefit, “With EGL, the time from development to test is very short. It is almost immediate. As soon as the development team has finished developing something, it can go into a test mode. From a testing perspective that is a big benefit and very good thing. We have a system that is very easy to test and that really speeds up total development time.”

For Petersen, the success of the WebCover project has confirmed EGL as a vital technology for future NCB development efforts. "I am confident that we have the skills needed to maintain this application, and I have confidence in moving forward with this technology. Our needs are growing quickly, and we would like to Web-enable a number of our applications. WebCover was a proof of concept for us for JSF/EGL technology. Based on our experience with WebCover, we have started a new JSF/EGL project and we are developing it in Rational Application Developer. There was close collaboration between our team and the team from Xact and they were very enthusiastic. This has been a very positive experience."

More important, however, are the business advantages gained from implementing WebCover with EGL — including increased customer responsiveness and customer satisfaction, reduced costs, and a significantly streamlined business process. With WebCover in production, NCB's customers are now able to enter copyright information themselves as soon as it becomes available. NCB staff members only have to validate the entered data.

Kristensen concludes, "When a producer has a new CD, they can type it into the system immediately. Each time they do, it minimizes data entry for our staff. We just have to validate it and put it into the production system. Total processing time is significantly reduced."

#### **For more information**

To learn more about IBM Rational Application Developer for WebSphere Software, visit:

**[ibm.com/software/rational/](http://ibm.com/software/rational/)**



© Copyright IBM Corporation 2005

IBM Corporation  
Route 100  
Somers, NY 10589  
U.S.A.

Printed in the United States of America  
08-05  
All Rights Reserved.

DB2, IBM, the IBM logo, iSeries, Lotus, Lotus Notes, MQSeries, Notes, Rational, VisualAge and WebSphere are trademarks of International Business Machines Corporation in the United States, other countries or both.

JavaServer is a trademark of Sun Microsystems, Inc. in the United States and other countries.

Other company, product and service names may be trademarks or service marks of others.

This case study is an example of how one customer uses IBM products. There is no guarantee of comparable results.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.