

## SEB Estonia

SEB is the second largest commercial bank in Estonia, offering a complete range of services for private individuals, companies and institutions. The bank serves 800,000 customers through 38 branch offices, Internet and telephone. The bank is fully owned by SEB Group and operates in Estonia under the SEB brand name since 2008.

SEB's success builds on innovative thinking, an international presence and strong, long-term relationships. We focus on companies and private customers with exacting requirements. And we promise them an enriching relationship. SEB changes constantly to adapt to new times, markets and people. SEB makes life easier, in all its phases. We have always strived to make a contribution to society.

“Server-centric architecture allows fast development”

NOT-CUSTOMER Release Non-Customer F7 Logout

Payments Requests

Domestic Payment In Cash

Beneficiary  
Account 1234567890  
\*Beneficiary MOUSE LTD

Amount 100 EUR Euro  
Payment Nr 1  
Reference number 123  
Transaction Description Payment1  
Payment type  Normal  Express

Back F4 Verify F1

### Teller Front Application

Teller Front Application was developed by SEB Estonia in order to modernize existing teller front program and help employees serve customers more efficiently.

Originally, the bank was in the situation where tellers in the branches had to use many different applications written in different manner on different platforms. Therefore, it was important to conform them and use a standard application.

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### The Architecture

- ZK + Spring + Hibernate

The web application consists of 3 layers

- Presentation (ZK)
- Logic (Spring managed classes)
- Connectivity (JMS)

Most of the code (counted by lines) is in Logic layer – 85%, 10% on Presentation and the remainder 5% on Connectivity. In this project, ZK out of the box components are not used directly, instead, a set of

custom components are built on ZK components allowing compact coding in ZUL files like the following:

```
<form bean = "Credential">  
  <field fieldname = "username"/>  
  <field fieldname = "password"/>  
</form>
```

Fields labels in different languages, help texts, types of input elements, colours, validation etc are described in configuration database and reused between forms.

## The Challenge

The most challenging part of the project was to create a look-and-feel according to internal brand policy that was developed as a set of HTML files by an external design company.

## Why ZK

At the start of the project, we were looking for a framework with rich set of components that are easy to develop and fast at runtime.

At the beginning we evaluated several frameworks, but eventually ZK was selected for several reasons;

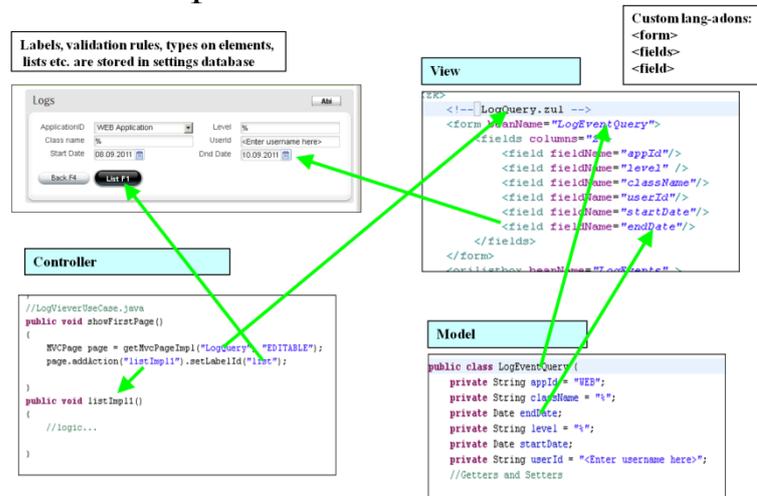
- Server-centric architecture which allows fast development phase
- Possibility to easily extend out-of-box functionality to create custom components and reuse code as much as possible
- Minimize amount of code depending on a particular presentation technology to have good coverage of logic by JUnit
- Flexible on adoption of new features across the whole application.

Additionally, one of the strongest sides of ZK its efficiency in using server-side resources and fine granulated communication between the browser and server. By using ZK, screens can be fully controlled on the server with low network cost.

Moreover, ZK's server push technology also plays an important role in this project affecting the whole paradigm of the application. It allows the use of parallel threads in the application to execute queries to back-end in advance and pre-load. ZK offers the ability to use different push mechanisms whilst providing the switching of them being totally transparent.

*"one of the strongest sides of ZK is its efficiency in using server-side resources and fine granulated communication between the browser and server"*

## Example of custom extensions



## The Result

The ZK framework based product was first released in January 2011, the application is now used by approximately 300 concurrent users of the bank to serve customers and it consists of 120-130 different screens (ZUL files).

### About ZK

Potix Corporation develops and supports ZK, the #1 Ajax solution on SourceForge.net, the world's largest open source host. ZK has more than 1,500,000 downloads since its first release in late 2005. ZK is deployed by a large number of Fortune Global 500 companies, including Deutsche Bank, Barclays, Sony, Sun Microsystems and Toyota, providing them with the ability to rapidly create rich Ajax enterprise level applications.

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