

# From Character-based Forms to SOA and BPM Suite

## The journey of the Dutch court systems

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### Introduction

The Dutch courts are supported by a dedicated IT organization. The systems they are running today are built with Oracle Forms 4.5 and installed at every courthouse. An innovation program has started to start digitizing the processes and to centralize the IT systems. This paper explains the transition from the old forms systems to a new Service Oriented architecture that uses BPM and case management to monitor and manage the process.

### Court system

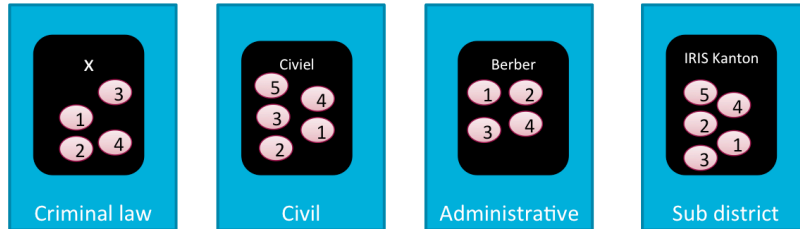
The court system in the Netherlands is divided in a number of different sectors, based on the type of conflict that needs to be resolved:

- *Criminal law sector.* The judges of the criminal law sector deal with all criminal cases, which do not come before the sub-district judge.
- *Civil law/family law sector.* The civil sector handles cases not specifically allocated to the sub-district judge. A number of district courts have a separate sector for family and juvenile cases, when the number of such cases is considerable.
- *Administrative law sector* With only a handful of exceptions, administrative disputes are heard by the district court; in many cases the hearing by the administrative law sector is preceded by an objection procedure under the auspices of the administrative authorities.
- *Sub district sector.* In terms of civil law, the sub-district judge deals with all cases involving rents, hire purchase and employment. In criminal law, the sub-district judge only deals with minor offences, not serious offences. Often these are cases in which the police or the public prosecutor has proposed a settlement. If the accused refuses to accept such a proposal, then the case comes before the sub-district judge. The sub-district judge usually delivers an oral judgment immediately after the hearing.

### Situation before

The IT systems reflected not only the different court types, but also the different locations. Every courthouse had a version of the different systems for the different case types. Every courthouse had their own configuration of each system. There was a lot of duplication of functionality. The systems were built using Oracle Forms 4.5 (Character based). The customer facing applications (web site etc) were realized using Microsoft technology, and so were the office automation applications (Microsoft Office, Active Directory).

- ① Case
  - ② Hearing
  - ③ Decision
  - ④ Person
  - ⑤ Register
- IRIS kanton = Primary process system for sub district court  
 Berber = Primary process system for administrative court  
 Civiel = Primary process system for civil court  
 x = Primary process system for criminal court



*Illustration 1 Silos for each primary process system*

This situation had a number of problems:

- Duplication of functionality;
- Technology that was no longer supported by the vendor;
- Difficult to assign people to other locations, because they all used different installations.

As a first step, the system for sub-district court was replaced by a new system (IRIS Kanton). However, this only solved the problem of de-supported technology. It was still a silo.

### **Innovation goals**

A program has started to modernize the Dutch court systems. The program has three main goals:

- Simpler procedure. The law will be changed so the procedures for administrative and civil court are more alike. The time to complete a procedure should be shortened.
- Digital procedure. Rather than having paper files, the entire case should be digitized, including archiving.
- Easier access to the justice system. Citizens get easier access to the court systems by offering them access via Internet to their case files and metadata.

### **Reference architecture and roadmap**

To cater for the program goals and to solve the problems with the current technology (duplication of functionality), a new architecture was designed. This architecture is based on Service Oriented Architecture. To manage the court procedures BPM and Case management are used. The customer facing user interface is realized using Microsoft technology (Sharepoint), the other areas are realized using Oracle technology.

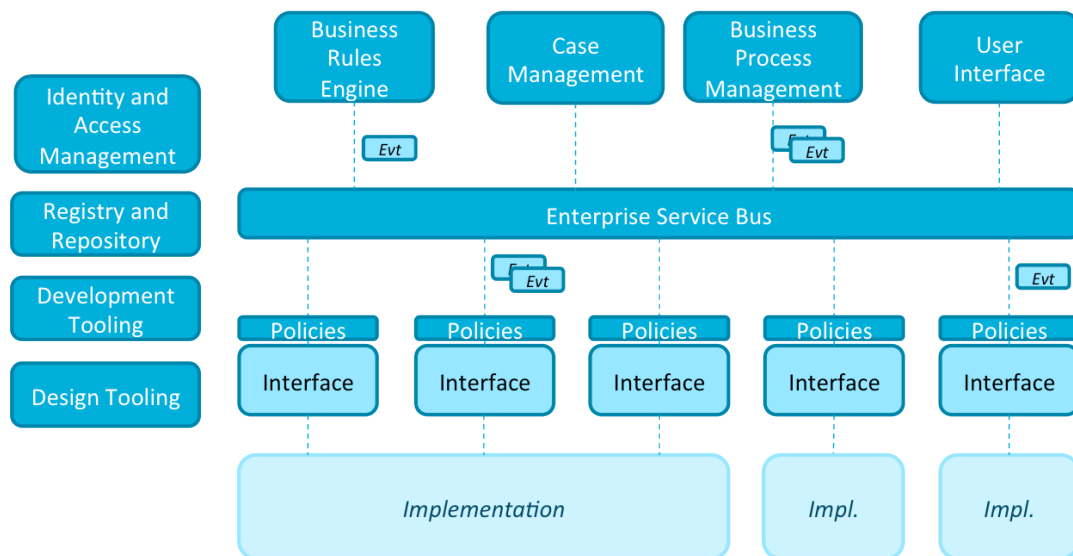


Illustration 2 Reference architecture for SOA (source: SOA Made Simple, Packt 2012)

The strategy to realize the new architecture was changed from replacing system to system to realizing process by process. This was necessary to ensure that reusable services were built.

### Situation after first project

There are a number of procedures that can be handled digitally today. The first project that was picked was a sub-district case where both parties agree to handle the case digitally. It was an end-to-end project where the software from IRIS Kanton (the ADF JHeadstart application) was reused partially.

Web Center content was used to store and organize the case files. Oracle ADF was used to provide access to the case data and case files to employees (Registry and Judges). Microsoft Sharepoint was used to provide access to case data and case files to the parties involved. Oracle Service Bus was used to expose services to both the outside world and internal composite services. Oracle SOA Suite was used to expose business logic in PL/SQL as web services and to create composite services.

The services form the basis for the other sectors (administrative, civil court). The first steps in SOA Governance were taken and a need for continuous delivery and joint change management was identified.

On the roadmap are the following items from an IT point of view:

- Add other case types (administrative and civil)
- Introduce case management
- Redesign the user interface from a data oriented interface to a task oriented interface
- Look for components to buy

From a business point of view the following items are on the roadmap:

- Define the new process law
- Introduce case management and business process management to make the procedures as effective and efficient as possible
- Redesign the user interface
- Give access to lawyers and citizens
- Enable online payments

## **Conclusion**

The new architecture, technology and process have a huge impact on the entire organization.

### *Parties*

New tools will become available to follow closely and participate in a digital case. The process will become more efficient because they don't have to print everything and send it by email. Communication is easier.

### *End user*

The end user in the courthouses will use GUIs rather than character based screens. They will move from paper files that need to be copied organized etc, to digital files. The configuration of the systems will be centrally organized, meaning they have less freedom to organize their work individually per courthouse.

The user interface will become task and case oriented rather than data oriented. A number of steps will be automated, especially for the registry.

### *Development*

The developers in the organization need to learn new tools and languages like JDeveloper, Java, BPEL, BPMN, etc. The architecture is also vastly different; they will have to learn about services, SOA governance, agile/scrum etc.

### *Administration*

The database administrators have to learn new tooling: the Oracle Fusion Middleware stack. This includes WebLogic server, SOA Suite, BPM Suite and WebCenter Content. These tools are not trivial when it comes to HA and other requirements.

### *Support*

The main challenge for support is matching the structure of the organization to the new architecture. In the past, one application was used by one specific target group. Now services are used by different courthouses, different sectors and different parties. This means that support has more than one customer to talk to. Because everything will become digital, the demands on availability and support will increase as well.

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