

MAQS

Client: Macadam Automotive Support

Project name: MAQS

Industry: Automotive

Duration: 6 man/month

Technologies: .NET Framework 3.5, C#, MS SQL Server 2008, Web Services, Windows Services, Win Forms, Dev Force, Crystal Reports



Challenge

Macadam Automotive Support is the largest provider of "off-lease" services in Europe. The company has been expanded and reached the point, where the available methods and means to control the quality of its services didn't produce the desired effect.

Much of the work was carried out manually and wasn't automated. Employees spent a huge amount of time on generating monthly reports.



The company deals with vehicle inspection, controlling the correctness of filling in all the obligatory documents, vehicles' equipment condition, damage assessment at the end of the lease period. The company's customers are mainly leasing companies and banks. There are thousands of inspections during the day, which are carried out by the company's regional offices in all major EU countries. Vehicle inspection can include hundreds of items, which have to be verified.

Macadam opened an additional office to control the quality of the company's services, which main responsibility is the follow-up inspection of the top-priority business goals. This is the office that couldn't cope with the increased workload because the standard tools such as MS Excel, MS Access, MS Outlook automated the work only partially. The company's software built "in-house" didn't have enough flexibility for an adequate response to the changing business requirements.

The company's IT department wasn't able to implement the necessary changes with the required rate. As a consequence, the employees spent their time inefficiently and there were mistakes in the work of the Quality Assurance Department.

Requirements

All these difficulties had to be solved with the implementation of a new software. After several meetings and discussions with the quality director of Macadam – Pierre De Shepper, we formulated the following system requirements:

- **Architecture** – the system has to be distributed. The server with the business logic and data store is located in Europe. The customers can run the system in any company's office
- **Integration** – it has to be integrated with the existent company's electronic systems. Data replication has to be carried out on schedule or on demand
- **Speed** – the response time for certain operations has to be improved 3-5 times compared with the existent software
- **Automation** – the distribution of warning emails with reports on the detected problems has to be batched and carried out automatically on schedule or on demand. The scheme of escalation of conflict situations has to be implemented in accordance with the hierarchy of the company's staff
- **Flexibility** – the software must be extremely flexible and allow configuring the new types of inspections without any involvement of developers. In particular, a special "visual designer" has to be created with the possibility to use any of European languages
- **Reporting** – a broad set of daily, weekly and monthly reports should be developed to give the means to control the quality of Macadam's services

Solution

At the stage of the analysis of the company's business processes, we came to a conclusion that the future solution fits with the concept of IT Service Management very well. The difference is that the errors, which are found by the company's staff during the inspections, act as the incidents and requests.

iQueSoft has strong business expertise in developing systems for ITIL based processes, and this expertise was extremely useful in this case.



Our company has previously implemented some parts of the system in one form or another in other projects. As iQueSoft was quite familiar with the business domain we have chosen the fixed price cooperation model for the project.

Besides the requirements listed above there was an additional one – the system has to be designed to allow an easy future customization if, for example, new types of data should be examined or new types of reports are needed.

It took a few additional meetings to come to the agreement regarding the software's architecture, integration approaches with Macadam's IT department. The project was code-named MAQS, the team of three developers took part in this project; we built and put in production such a complex system within about 6 months. All the aims were achieved.

Architecture

iQueSoft appreciates the value of the good architecture for complex data centric business applications. The system was designed and implemented in accordance with the classic three-tier client/server architecture. Additional efforts were applied to make the system flexible enough in the dimensions along which a system is expected to evolve. These are flexible reporting, replication/import and configuration mechanisms, some options for configurable localization. We used extensively Web Services and inversion-of-control concept to make the components of the system as much dependable as possible.

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