

Highly Complex Payroll Application – built with SQL development!

“After the implementation of the new application, our cost savings are significant.”

Nearshore services

Technologies:
 Microsoft SQL Server, Oracle DB,
 Crystal Reports, VB .NET, SQL
 Server Migration Assistant



About the Customer

The client specializes in transport systems in densely populated areas, creating access to mining and port areas, and the transportation of energy. They provide integrated solutions in which the application of technological innovations and collaboration with the client are what makes the difference. Priority is given to the quality of the infrastructure, train systems and building installations. The goal is to enable end users to stay and travel in comfort and safety.

About Ropardo S.R.L.

Ropardo is an IT group with solid turnover and over 50 skilled employees. **Innovation, Quality, On-time Delivery** have been our constant objectives. Our main expertise is in: software development, implementation of complex software solutions and maintenance of software/IT systems. We provide the following in various industries: app and system development, business apps – ERP / CRM, web apps and e-business / eCommerce, software reengineering, software testing, maintenance and support.

Further info at: www.ropardo.ro

Challenge

The customer requested a solution for its existing payroll application that involved **lower annual costs**.

This was going to be achieved with a **future-proof MSSQL DB** migrated from the existing Oracle DB and **customization of the back-end application** to run on the new database.

The final application was to calculate personnel salaries each month based on parameters in the timesheets which were in large number and with many decimals. The payroll calculation algorithm was also going to run over 100 stored procedures and functions per employee, some of them reaching **20.000 code lines**.

Solution by Ropardo

To fit the same functionality as Oracle, our engineers proceeded to the **correction/adaption and refactoring** of the calculation process in the MSSQL-migrated database.

Our team managed tens of thousands of rows consisting in the **large amount of input data** coming from the very high number of employees (1500+), each employee having a large volume of input data that had to be processed. 100+ functions and stored procedures are called on, resulting in the end into around 40.000 rows in the report (table). Ropardo engineers successfully coped with this by **implementing highly complex calculation algorithms**.

For this, we capitalized all the MSSQL functionalities such as cursors, complex data type conversions. Beside the default MSSQL functions and methods, **we customized procedures and functions** that replaced native Oracle methods and functions having no correspondent in MSSQL. Achieving this came rather naturally to our team owing to its **20+ experience in SQL development**, but still the efforts were considerable because of the database size.

This complex calculation process has been designed and implemented according to local working time regulations referring to: travel time, night shifts, week-ends and holidays, full-time/part-time contracts, break hours, compensation hours, drivers' hours, overtime percentages, leaves and many more, resulting in **various calculation methods**.

As there is no exact data correlation between Oracle and MSSQL Server, handling values with many decimals in the context of a different working-time system involved **high calculation precision and diligence** from our engineers.

Also, since MSSQL server does not support sequences, as opposed to Oracle, they were replaced by auto-increment (identity) and the entire saving data mechanism.

SOFTWARE CONSULTING	Process management
SOFTWARE DEVELOPMENT	Software test
SOFTWARE SERVICES	Maintenance Performance Tuning
TESTING / QUALITY	Load/Performance Functional

LEVEL of SERVICES

Outsourcing to Ropardo:

- Quality custom software development
- End-user satisfaction
- Short time to market
- Quantifiable value
- Guaranteed performance level
- Reduced and controlled costs
- Managed risks
- Good value-for-money
- Flexibility

Contact

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Technologies

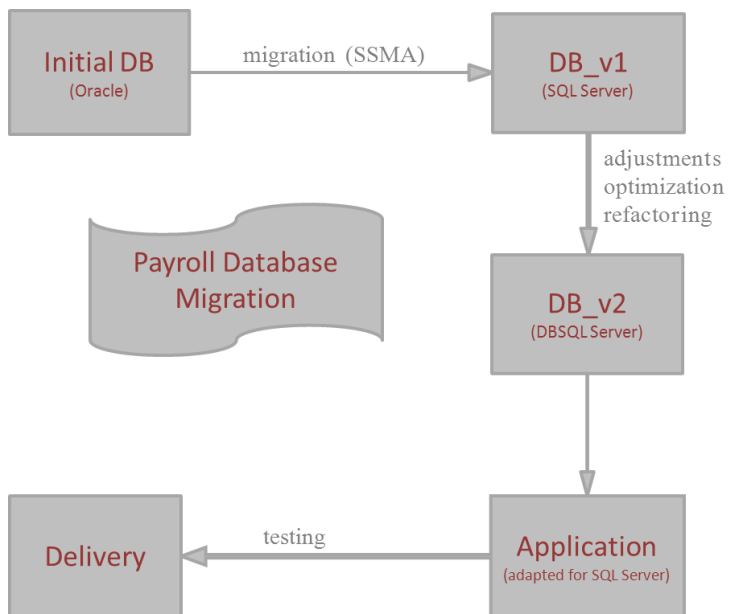
ROPARDO team used as migration tool the SQL Server Migration Assistant (SSMA) for Oracle to migrate the database design and the data itself.

VB. NET – was used to build the application adapted to the new SQL Server database

Crystal Reports – used to create hundreds of reports adapted to the new SQL Server database

Oracle DB – initial database system

Microsoft SQL Server – final database system



Benefits

Beside the complex algorithm shown above, the payroll application runs **faster, more accurately and securely**.

The process can be executed for one or all of the employee groups during a given period (current, previous). The application delivers a series of reports successfully updated for the new database.

After database migration and implementation into the new application, the customer enjoyed **significant cost savings** while sticking to quality standards.

