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**BUILDING A COMPLEX
INFORMATION SYSTEM**
FOR SPP - DISTRIBÚCIA, A.S.



The company SPP - distribúcia, a.s. (SPP-D) deals with sales of distribution capacities, development activities, operation and maintenance of the gas distribution network, which distributes approximately 98% of the total distributed volume of natural gas in the Slovak Republic. SPP-D places emphasis on the quality of services provided by 22 suppliers and customers to more than 1.5 million collection points. Through nearly 33,000 kilometers of network, the company annually distributes more than 5 billion m³ of natural gas, one of the most environmentally friendly and comfortable types of energy.

The incentive to start the transformation of information and communication technology systems (ICT) in SPP-D was legislative changes resulting from the content of the 3rd liberalization package. Based on these changes, the program to separate the SPP-D IT from IT systems in Slovenský plynárenský priemysel, a.s. was started. (SPP). The program for the separation and entire transformation of the IT in SPP-D had to be necessarily prepared to meet all regulatory conditions of the Office for the Regulation of Network Industries (ORNI) for separating the operation of the distribution network in the IT field.

In the time before the IT transformation in SPP-D, the used information systems and their architecture reflected the period when SPP-D and SPP formed a single company.

Business processes were different from today's SPP-D needs, and IT as well as its architecture requirements were different.

The transformation process itself was carried out in two phases. The aim of Phase 1 was to achieve, by 1 January 2014, a consistent separation of databases for information systems containing confidential information on both. The aim of Phase 2 was to completely separate the SPP-D IT systems from SPP systems by 30 June 2016.

In the SPP-D it was necessary to build an IT department whose role is the operation, management and development of information systems and IT infrastructure. From the beginning it was considered so-called slim IT, where the substantial part of activities will be outsourced.

SPP-D has launched procurement for the building and operation of a Complex Information System (CIS), including its further development, mainly directed on its gradual technical and operational optimization. An important criterion for the construction of the CIS was the requirement of ORNI, according to which billing from the system for gas distribution to the users of the SPP-D distribution network had to be carried out, calculated and documented at individual collection points.

After successfully completing the procurement and selection of the supplier, Aqist, a.s., on 30 April 2015, the implementation of the CIS project began with the signing of the "Information Technology Service Contract".

THE PROJECT WAS DIVIDED INTO SEVERAL PHASES

- PHASE 0** building of infrastructure and putting it into operation
- PHASE 1** Deploying SAP ERP services and support systems
- PHASE 2** Deployment of the Distribution Information System - BillienDistribution and FSMC
- PHASE 3** deployment of geographic and mobile services (GIS, GPS monitoring of vehicles...)

The systems were modified and migrated gradually in individual phases, and their backward integration was secured by a number of temporary interfaces defined through the transitive architecture.

Phase 0 was aimed at building the CIS HW infrastructure in data centers, building and migrating support services, an Active Directory system, MS Exchange environment, installing and configuring the Service Desk, installing support infrastructure applications such as IBM Websphere, BPM, ECM and MS Sharepoint).

Phase 1 implemented the setting and launching of the operation of the SAP ERP system and related systems/modules along with supporting IS, in which data sharing was required.

Phase 2 was the most challenging because it implemented the deployment of a new BillienDistribution system, demanding the migration of data from existing DIS, SAP IS-U systems, the deployment of a new FSMC system (a supported IT system to manage the performance of mobile working groups) and dismantling systems that have been gradually replaced by new systems and applications.

In this step the system that replaced the original solutions were deployed, covering the main business processes in SPP-D, among others:

- connecting new customers to the distribution network;
- management of distribution contracts;
- balancing business;
- billing;
- nominations;
- calculation of losses;
- management and logistics of meters;
- managing readouts.

This step required data migration from existing SAP IS-U systems and the distribution system (DIS) into the new systems. This system already has new features, e.g. billing at the collection point level, clearing of invoices, and so on. And what is **the main thing**, BillienDistribution **system** unified the data base, including key data at collection points, readouts and consumption, distributions contracts, installation/de-installation dates, etc. These data are recorded and stored in one place and accessible in the application's parts that use that data. The elimination of a number of operating systems and their interfaces, the simplification of technical architecture and associated maintenance of systems and integration demands have been achieved, **BillienDistribution replacing DIS systems, SAP IŠLI, website forms, outsourcing readouts, and also some services associated with these systems, such as e.g. EZoP.**

This greatly reduces the number of separate systems with communication and integration demands. In connection with a reduction in the number of systems, there is the elimination of data duplication, e.g. information about installing and disassembling the meters existing in two systems without a guarantee of data consistency. In the last, third step, there was the suggestion of deployment to other existing systems.

The deployment of systems took place in Phase 3, which did not require data sharing. These were the Geographic Information System (GIS) and the GPS monitoring system used to monitor vehicles. An agreed testing strategy was used upon the deployment of the IT systems.

Test scenarios included functional integration tests on synthetic data, migration tests on production data, acceptance tests to check system functionalities, and performance tests to control the speed and response of the system prior to deployment into production.

CUSTOMER TESTIMONIAL



"The IT transformation project in SPP-D has been a major challenge in its scope and demands. During the course of 2.5 years, there was the creation of a new organizational structure, a technical specification for procurement, implementation of a public procurement and a successful implementation of the IT unbundling project itself. Thanks to all colleagues not only from the SPP-D participating in the project, but also to the supplier, and not least of all the colleagues from SPP." The replacement of SAP IS-U, DIS, and other systems solved on the basis of **BillienDistribution** has provided us with much greater flexibility, simplification of technical architecture and the associated maintenance of systems and integration demands."

Ing. Miroslav Majerčík
Program Manager of CIS SPP - distribúcia, a.s.

KEY PROJECT PARAMETERS

- The project implemented 854 complex requirements of the customer
- The implemented Complex Information System (CIS) covers and integrates the 20 system modules used by the customer's 12 departments
- The total number of applications in the CIS is 101
- The implementation team consisted of more than 140 members in defined roles
- The number of implemented integration interfaces is more than 97
- Number of test cases
- in the test campaigns was more than 2800
- The database size is 1.5 TB
- The high availability is provided through Oracle clusterware
- During the day, the system typically executes 2000 transactions per second at the DB level
- The content of the transferred data is up to 500 MB/s

THE BENEFITS OF THE PROJECT FOR THE CUSTOMER

- A unified business system supporting gas distribution processes and the gas market operator
- A solution reflecting industry standards while meeting the specific requirements of SPP-D
- A transparent processing system and a central repository for business data
- A flexible solution for adapting to the needs of the SPP-D
- Workflow management of tasks
- Distributed information system
- Performance-scalable, robust system taking into account all safety requirements

