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Eurotel Praha, Ltd. is joint venture of ČESKÝ TELECOM, Ltd. (51 %) and Atlantic West B.V. (49 %). Atlantic West B.V. company is equally owned by Verizon Communications (NYSE: VZ) and AT&T Wireless Services (NYSE: AWE).

SDMT – Supporting System for Planning and Maintenance of Eurotel Network

Telecommunication network configuration planning, development and maintenance are an extremely demanding task. For a mobile operator, these are strategic activities having critical effect on quality and promptness of service implementation. Specially for this area, KOMIX company developed an application that helps Eurotel employees to reach their network control objectives, and also increases significantly effectiveness of their effort. This is another of the reasons that the project was declared the best project in 2001 by an internal assessment in Eurotel.

Brief Description of Application

The SDMT (Switching Database Management Tool) application has two basic goals:

The application development is not yet finished. In 2003, new components are added to enhance current functionality and introduce new functions.

Procedure

The project has begun in June 2000 by developing specification of user requirements. Thanks to KMX-Requirements methodology, the user specification was generated within less than two months, and its results have been used for whole duration of the project. Interesting point is that no changes have had to be made to the specification.

Following the user requirements, general outline of the whole system was prepared. After three months, following information was available:

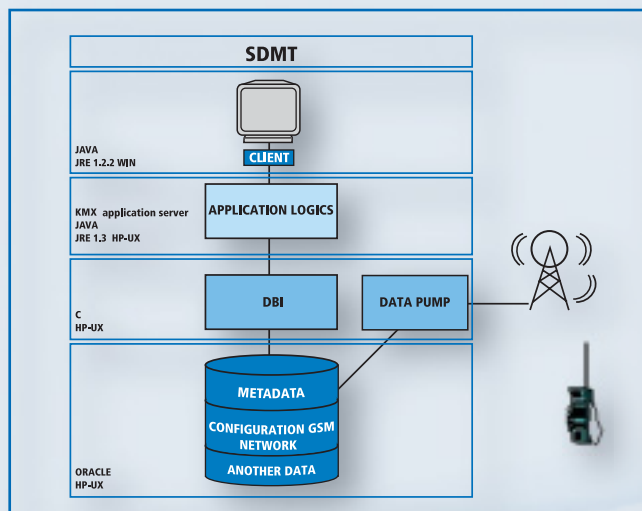
- Making configuration data of selected network elements accessible so that it can be managed with maximum effectiveness. Complete configuration data of individual network elements are imported into the application every day. Then they are displayed in several different views – basic information (such as basic data areas, links to environment, history of changes, parameter comparison for more elements), special outputs (presenting a comprehensive view to particular part of configuration).
- Supporting the process of performing changes in the network and making it more effective – from such viewpoint, the read data is input for planning the changes. The changes can be made either from existing data or on a greenfield site and they can be organized to facilitate activities of both management and executive employees.
- Functional architecture – primary components were identified, and their functions and relations were described.
- Technology architecture – individual layers, technical methods of their processing, basic principles of data model were suggested, and other information was provided.
- Method of configuration data processing – several variants were identified to acquire configuration data.
- Proposal of development process – preliminary definition of individual increments that respected user needs (reflected by the requirements) as well as technical needs. The next step was creation of individual increments whose development represented detail design, programming, writing test cases and



performing tests. Content of the next increments is regularly reviewed and tailored on the basis of feedback provided by individual users using the application.

Application technology

The application is written as multi-layer B2B system, as shown on the diagram.



Database – consists of several components: metadata component that contains descriptions of technological element items in the telecommunication network, their structure and other information. Another database component is the configuration data itself, information on planned changes, service part, etc.

Database Interface (DBI) – task of DBI layer is to provide data accessibility, with minimal relation to actual subject data content, if possible. This approach (together with filled metadata) allows for enhancing processed subject area with entirely new structures without necessity to program anything anywhere in the application. Another goal is the ability for maximum utilization of database possibilities while logical processing would be independent on the database used.

Data pump – is responsible for importing configuration data into the database. The import is controlled by metadata that describes both input data format and requirements for method of saving configuration data for application processing.

Application server is based on the KMX application server covered by processing of configuration data. Application server makes the basic information accessible based on requirements of the client component of the system, and performs logics processing of the whole system.

Client – is developed as a modern MDI application. The goal of the application client component is intermediating inputs and outputs while the output format is partially controlled by metadata.

Results

„SDMT system development as is known and used today was not a trivial matter. As noted before, the project was started in 2000 in co-operation with KOMIX company. This important step, however, followed 18-month preliminary work to identify points where strategic processes in planning core of the company telecommunication network would need to be substantially supported, in forecast of 5 to 10 years. Considering such dynamical development of telecommunication industry as we had the chance to observe at the millennium, such task seemed to be vastly difficult, almost unrealistic.

For this reason, development of user requirement index and consequent system requirements were given accordingly high attention. Creation of the specifications was associated by many meetings with Eurotel specialists to ensure that the resulting product exactly meets the hard criteria. The main goal was, and still is, providing the specialists with maximum support without introducing undue administrative into their work.

The system development was set up very strictly in such manner that the system would be usable directly for network planning in the first 6 months. This approach enabled the selected development by increment method, when the basic application was first finished with quite limited functionality, and then separate functions were added into it, which can be used for work immediately after completion. Planning specialists co-operate continuously in the development so that they can receive new functions that are stepwise defined by them. It is the maximum satisfaction of SDMT system users that guarantees general success of the considerable investments. Regarding the high complexity of the issue being developed, it is no surprise that another work teams in the company begin using the product only several years after the development has been initiated. The product thus successively increases effectiveness of next strategic and carefully watched processes that were, until recently, based solely on a manual work.

What we can assess highly positively is the fact that even after several years of work on the issue, the goal of development is kept as originally defined. The constantly present fears that the resulting product would miss the intention are, by that time, eliminated.”

*Zdeněk Bílek, Eurotel,
Network Configuration Planning Officer*

„All the time, the work of KOMIX’s developers on the project is very demanding and intensive. Colleagues from Eurotel assist them to manage the work, and their sense of co-operation is on extraordinarily high level. They have deep technical knowledge, have realistic expectations, and from the very beginning they have knew what they need, and follow the aim. When solving various issues, the whole team consisting of representatives of both companies can direct its all effort to the solution.”

*Patrik Šálek, KOMIX Ltd.,
Project Manager*

KOMIX – SYSTEM INTEGRATOR

KOMIX Ltd. is a system integrator providing its own IT solutions based on advanced but well-established technologies. The services it provides cover all information system life cycle stages, starting from definition of requirements applying to system functionality up to acceptance testing and support of system operation.

The company KOMIX was established in Prague, September 1992.



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