



# Selected Projects of VIA Software



IT CONSULTING



SOFTWARE  
DEVELOPMENT



OPERATIONS  
RESEARCH



OPERATIONAL  
SUPPORT AND  
SOFTWARE  
MAINTENANCE

[www.via-software.com](http://www.via-software.com)



# IT CONSULTING



## SYSTEM DESIGN

Consulting on the database design of the data warehouse for a customer loyalty program

Our client planned to introduce a cross-sector customer loyalty program. In the phase before the start of this program we have supported our client with the specification of the initial data model of the central database for the storage of customer data and customer transactions including specification of interfaces to data providers.



- ✓ Specification and system design of an IT system for sales support



## TEST MANAGEMENT AND QUALITY ASSURANCE

- ✓ Quality Assurance of a reporting system for sales commissions
- ✓ Test management and quality assurance for the introduction of a forecasting system
- ✓ Support of the test management for a major revenue management system
- ✓ Support of test management and quality assurance of a revenue management system by the development of specific analysis tools
- ✓ Test management and quality assurance during the introduction of a forecasting system



## MIGRATION PLANNING

- ✓ Support of migration planning for a revenue management system
- ✓ Migration planning for a costs and revenue database



# IT CONSULTING

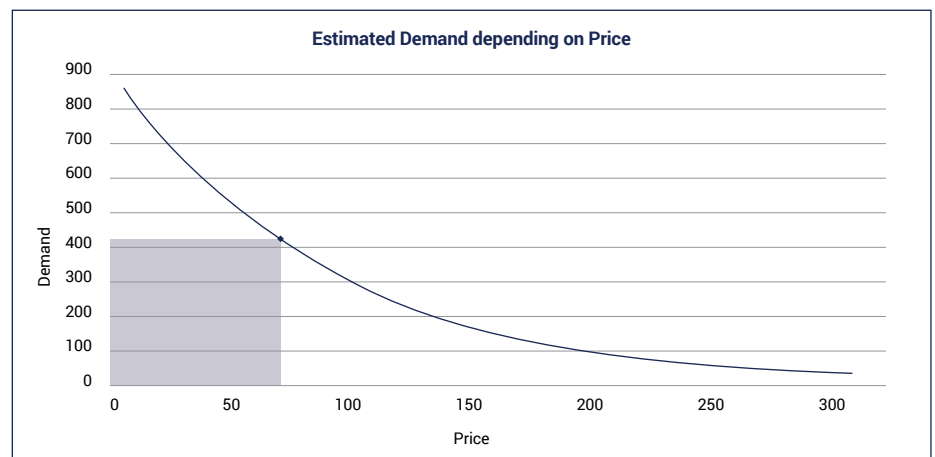


## REQUIREMENTS ENGINEERING

### Requirements engineering and interface specification for a system for the estimation of price elasticities

VIA Software supported the collection and structuring of requirements for a newly developed system for estimating price elasticities. In this project, VIA Software also supported the development of a first data model and the specification of several interfaces to systems for data provision and other systems that use the calculated price elasticities. This work contributed to the preparation of a tender and finally to the selection of a vendor for the implementation of the new system. During the implementation phase, the

VIA Software Team not only continued to work on the requirements for extensions and change requests, but also supported the communication regarding the requirements between all parties involved, such as the core project team, users, the method development team and the test team. For this project it was important that the VIA Software Team members were not only experienced requirements engineers, but that all team members had an academic background in applied mathematics.



- ✓ Consulting on the development of a revenue management system for a logistics company
- ✓ Requirements Engineering for a staff planning system for ground services at an airport
- ✓ Requirements engineering for a monitoring and reporting system for sales
- ✓ Quality assurance of the requirements specification of a workflow management system
- ✓ Requirements engineering for a data warehouse implementation
- ✓ Specification of enhancements of a forecasting system
- ✓ Requirements engineering and interface specification for a system for capacity optimization
- ✓ Support of requirements engineering for a system for network planning of a logistics airline
- ✓ Requirements Engineering for enhancements of a revenue management system
- ✓ Requirements Engineering for a revenue reporting system



## SOFTWARE DEVELOPMENT



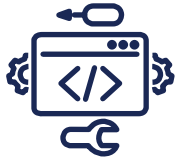
### STAFF PLANNING

- ✓ Design and implementation of a staff planning system for a call center
- ✓ Design and implementation of a system for absence planning
- ✓ Development of a system for field staff deployment planning
- ✓ Design and implementation of a system for planning and managing of standby services for oil and gas power plants



### MANAGEMENT OF COSTS AND REVENUES

- ✓ Design and implementation of a database for airport-related costs and revenues
- ✓ Design and implementation of a system for the provision of quality assured costs and revenues for planning purposes



# SOFTWARE DEVELOPMENT



## RESOURCE PLANNING IN GENERAL

### Development of a system for managing seminars

For our client, a company that deals with the organisation of seminars especially for teachers for musical education of small children, we have developed a powerful customer relationship management solution integrated with comprehensive functionalities for the management of seminars.

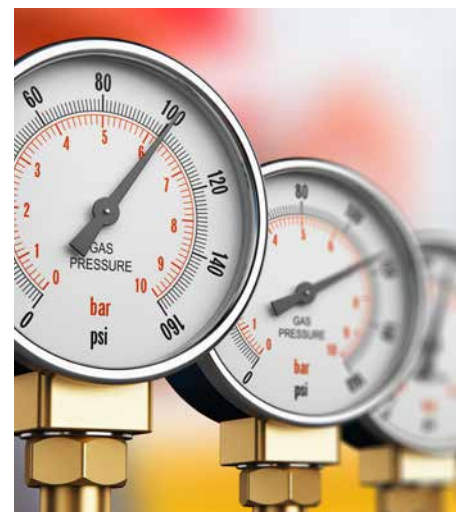


### Design and implementation of a system for the management of timetables for long-distance buses

We have implemented a system for the setup and management of timetables for long distance buses. The functionalities include plausibility checks of the time tables and the export of the time tables to downstream planning and information systems.

### Design and implementation of an interactive planning board for the visualization and management of the scheduling of production orders on a set of machines

For our client, a German manufacturer of pressure gas control valves for technical gases and high purity gases, we have implemented a solution for the visualization of the planned allocation of production machines. In addition to the visualization our solution permits to analyze "what-if scenarios" concerning the production planning.



✓ Design and implementation of a system for project planning





# SOFTWARE DEVELOPMENT



## OTHER DEVELOPMENT PROJECTS

Design and implementation of a web application for the management of data on international events as part of a revenue management solution

International events, congresses and trade fairs can have a significant impact on the demand for travel to the places concerned and on the customers' willingness to pay - at the beginning, during and at the end of these events. This information is therefore important input data for an airline or travel provider's revenue management system. For one of VIA Software's customers, the task was to replace the existing management of information on international events via a spreadsheet program with a web application that was to be used by the customer's external organization worldwide to collect and manage data on relevant events. VIA Software first supported the customer



in the design of such a web application and implemented the web application in a second step and gradually extended it according to the customer's requirements. This application includes an automatic categorization of events by relevance based on an automatic analysis of time series of historical revenue data and supplies all IT systems of the customer that use data on international events.

Design and implementation of a lossless data compression in the context of the publication of schedule data

When transferring flight schedules between different IT systems, a data format is often used in which each line of a file represents a flight with a specific flight number, which is operated on specific weekdays at specific times within a specific validity period. Using such a data format requires a smart grouping of daily flights into packages such that each package can be represented by a single line. As part of the specification of a comprehensive



flight schedule management system, VIA Software has developed an efficient prototype for this task.



# SOFTWARE DEVELOPMENT



## OTHER DEVELOPMENT PROJECTS

### Development of a system for monitoring of logistics services

Our client, a logistics airline, offers services for the delivery of goods within certain defined time frames. We supported the client in defining and

evaluating performance indicators based on detailed operational data about the transport of the goods.



- ✓ Design and implementation of a tool for the visualization of pricing data
- ✓ Development of software tools for the visualization and analysis of key figures for demand forecasting
- ✓ Design and implementation of a highly performant connection builder as part of a system for capacity optimization
- ✓ Development of a fraud detection system based on configurable rules
- ✓ Development of a tool for the connectivity analysis of flight schedules
- ✓ Development of systems for automatic management of waiting lists according to configurable rules



# OPERATIONS RESEARCH CONSULTING AND DEVELOPMENT



## MATHEMATICAL MODELING

- ✓ Consulting services for models and methods for the evaluation of flight schedule scenarios
- ✓ Consulting on the enhancement of a given customer choice model with respect to the inclusion of an additional choice criterion
- ✓ Implementation of tools for the analysis of air traffic statistics and flight schedule data



## STATISTICS

Design and implementation of monitoring tools for the detection of suspicious forecasts of a forecasting system

We have developed a set of heuristic plausibility checks of forecasts of a forecasting system. These checks are executed on a regular basis and as the result of the checks the responsible employees are informed by automatically generated emails.



Development and application of a model for the estimation of the willingness to pay of clients depending on day of week and time of day

During this project we have supported an international consulting company with the estimation of the willingness to pay for the parking facilities of a big European airport.







# OPERATIONS RESEARCH CONSULTING AND DEVELOPMENT



## OPTIMIZATION

Design and implementation of a system for the optimization of shift schedules based on given workforce requirements and employee-specific working time models

In this project we have supported an international consulting company with the task to optimize the staff planning for aircraft maintenance. Aircraft maintenance is typically executed by a team of highly specialized individuals. This imposes heavy restrictions for staff planning. In such cases the overall efficiency of the staff deployment can be increased significantly by an optimization of shift schedules. VIA Software has developed a mathematical



model for the evaluation of shift schedules and has implemented an optimization tool for this problem where all constraints for planning of shifts of the maintenance staffs are taken into account including employee specific working time models.

✓ Optimization of shift schedules for the ground services of an airport

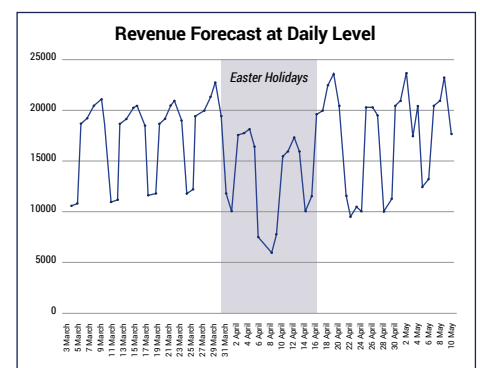
✓ Design and implementation of a tool for connectivity optimization of flight schedules



## FORECASTING

Design and implementation of a forecasting tool for customer demand and net revenue on day level

We have developed a powerful forecasting model for demand and revenue forecasts on day level which not only takes into account components like trend, season and day of week, but also effects resulting from public holidays – even depending on the days of week of a public holiday because it makes a big



difference whether, for example, May 1st falls on a Sunday or a Thursday.

✓ Design and implementation of a tool for the analysis of the impact of international events on customer demand and revenue



# OPERATIONAL SUPPORT AND SOFTWARE MAINTENANCE



## OPERATIONAL SUPPORT AND QUALITY ASSURANCE

- ✓ Support of quality assurance, incident management and user support for a forecasting system
- ✓ Operation and continuous quality assurance of a system for the provision of estimated costs and revenues for planning purposes
- ✓ Support of the operation of a capacity planning system



## SOFTWARE MAINTENANCE

Software maintenance and implementation of enhancements of a simulation tool for the analysis of the operational stability of flight schedules

VIA Software has been responsible for the software maintenance and the implementation of enhancements of a complex simulation tool which is used for the analysis of the operational stability of flight schedules. This simulation tool is calibrated based on historical flight times and ground times and determines the critical flights and ground times with respect to the goal of maximizing the operational stability and minimizing so called "rotational delays".



- ✓ Software maintenance and enhancements of a planning system for the economic evaluation of flight schedules
- ✓ Maintenance and further development of scripts and tools to support the operation of a fleet assignment system



## GET IN TOUCH

### HEAD OFFICE

**VIA Software GmbH & Co KG**  
Robert-Bosch-Str. 30a  
63303 Dreieich  
Germany

---

### LOCAL DEVELOPMENT CENTRE

**VIA Software SARL**  
Rue Carnot  
90000 Tangier  
Morocco



0049 6103 3889060



info@via-software.de



www.via-software.com