

# Excel Power BI and Data Modelling

## Application of PowerQuery and PowerPivot

[www.exbase.de/excel](http://www.exbase.de/excel)

With Excel Power BI you can update your data analyses to the next level.

### Key-Topics of the Workshop

- Automated Data Import and Data Cleansing
- Basic and Advanced Technics in PowerPivot-Tables
- Building Logical Data Relationships Instead of Lookup Formulas
- Optimising Data Models with DAX-Functions
- Creating Dynamic and Multivariate Financial Diagrams and Dashboards

This agenda was designed for Excel 2013 Professional Plus users. If your are working with Office 2016 or Office 365, we'll send you an adapted agenda on request.

#### By the way:

According to current Microsoft regulations PowerPivot can be used as an add-in for Excel 2010. PowerQuery works also in the Standard Version of Excel 2013 and in Excel 2010 Professional Plus with software assurance.

### Your Excel-Expert



**Stephan Nelles**

Excel-Trainer and Developer of  
Excel Power BI Tools

## DESCRIPTION OF THE WORKSHOP

Power-BI, in particular the tools PowerQuery and PowerPivot enable you to convert your data analysis to a much more efficient and more user-friendly level.

In this workshop you will learn to use time-saving PowerQuery-Functions to import raw data from various sources and to prepare it for further analyses. Then you create data models and dashboards with PowerPivot and apply new DAX-functions that facilitate your work tremendously.

## FIRST DAY

09.00

### Introduction

- Introduction to the topics of the workshop
- Short discussion with participants concerning their professional background and their expectations

09.15

### PowerQuery: Streamlining and Automatising the Import and Data Cleansing Process

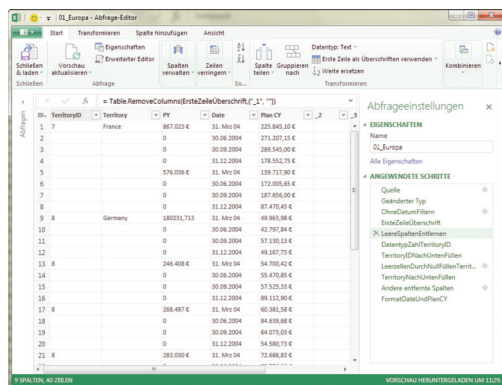
- Structure and basic features of PowerQuery
- Accessing various data sources via PowerQuery (CSV, SQL, Excel)
- Correcting typical data errors
- Editing data formats and replacing values and errors
- Encoding data for further data analyses

10.30 Coffee Break

11.00

### Advanced Functions to Edit Data in PowerQuery

- Edit PowerQuery commands and insert additional commands
- Organise, combine and merge queries
- Pivoting and unpivoting data with PowerQuery
- Group and aggregate columns
- Loading data from PowerQuery into a PowerPivot data model
- Publishing PowerQuery queries on a SharePoint site



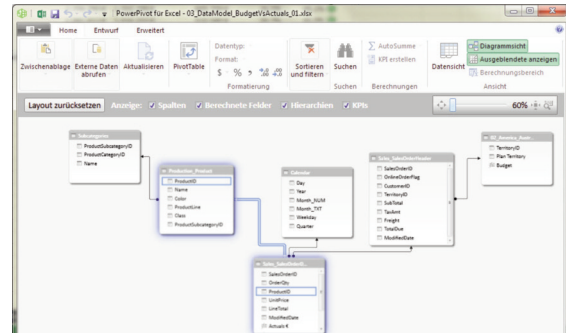
12.30 Lunch Break

13.30

### Data Modelling with DAX-Functions in PowerPivot

PowerPivot provides a local database server that allows its users to easily develop complex data models. This part of the workshop communicates the basic steps to connect data tables from various sources with one another. You also learn how to exclude data (filter, hide etc.) and how to add necessary additional calculations using calculated columns.

- Introduction to the analysis with PowerPivot
- Establishing logical relationships between fact and dimension tables of a data model
- Introduction to the DAX formula library



### Working with Calculated Columns

About 100 powerful DAX-Functionen constitute the centerpiece of PowerPivot. In this part of the workshop you master the application of important new functions. Equipped with these you can access a terrific set of opportunities to improve your data analyses.

- Enhancements of a basic PowerPivot data model: Integrating flat files and adding calculated columns
- DAX essentials: Building, identifying and controlling the filter context
- Adding slicers to the PowerPivot table
- Conditional calculation with CALCULATE()
- Manipulating the filter context with ALL(), ALLEXCEPT() and FILTER()
- Calculating percentages and handling of error values

15.00 Coffee Break

### Case Study: Data Modelling with PowerPivot

- Loading data into the data model
- Establishing relationships between tables
- Aggregating data using DAX formulas (count customers, distinct count of transactions or contracts, regional or other conditional aggregations etc.)

17.00 End of Day 1

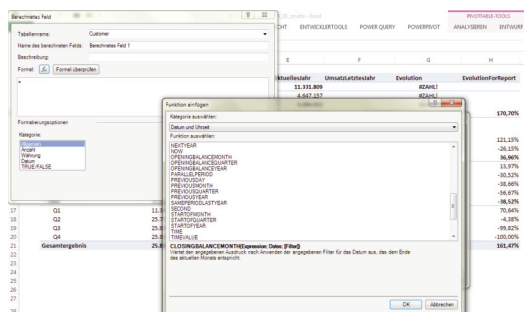
## SECOND DAY

09.00

### Time Intelligence with PowerPivot

A mighty instrument are the DAX-Functions of the category „Date and Time“, the so called Time Intelligence-Functions that are used to easily compare different periods of time:

- Introduction to Time Intelligence in PowerPivot
- Integration of calendars in data models
- Getting acquainted to default time and date formulas of the DAX library: DATEADD(), DATESBETWEEN(), TOTALYTD(), SAMEPERIODLASTYEAR(), CLOSINGBALANCEMONTH()



10.30 Coffee Break

11.00

### Working with Individual Calendars

- Application of customised DAX formulas for data comparison in user defined calendar environments (comparing fiscal quarters, years etc.)
- Year-to-date and year-over-year calculation in PowerPivot

12.30 Lunch Break

13.30

### Creating Multivariate Financial Dashboards

Due to changes of the data base, reports usually need to be adapted in order to display accurate results. In this part of the workshop you will learn how to create dynamic reports with PowerPivot and additional functions. These reports don't just adapt to data changes automatically, the content displayed can be controlled via slicers.

- Controlling PowerPivot tables and charts with slicers and timelines
- Visualising KPI's with conditional formatting (traffic lights, icon sets etc.)
- Integration of cube functions in dashboards and reports

15.00 Coffee Break

15.30

### Questions and Company-Specific Challenges

This part of the seminar is for topics und questions that come up in the planning process and during the workshop. Alternatively, we could give an introduction to „Power BI Desktop“, an app by Microsoft that was designed to easily visualise data in various diagrams.

17.00 End of the Workshop

## YOUR EXCEL-EXPERT



**Stephan Nelles** is a well known excel-trainer, consultant and developer of Self-BI-Tools. His area of expertise includes basic and advanced techniques to master data from import over data modelling to the presentation of results with dynamic reports and high-quality dashboards. Over the last 9 years Stephan Nelles trained a few thousand people at more than 500 booked training days. Moreover he is the author of the most-sold German Excel reference book „Excel 2013 im Controlling“.

## COURSE MATERIAL

All participants get a handout with explanations and screenshots illustrating important workshop-topics as well as the excel-files. With the help of the course material participants should be able to recollect the workshop and design solutions of their own.

**This workshop-proposal can be adapted according to your needs and supplemented by additional training-methods such as:**

- E-Mail and Skype-Support
- Exercises for Training
- Webinars and training videos
- Consulting services in the development of solutions

## FEEDBACK FOR OUR SEMINARS

„Very useful seminar concerning the operation and presentation of mass data.“ *Uwe Albiel, Head of Financial Controlling, Hoist GmbH (PowerPivot)*

„Highly recommendable! In short time, I learned many new things with a high practical relevance.“ *Sandra Mäusli, Project Easton Finance, Credit Suisse (PowerPivot)*

„If you are working with Excel, you should have attended this course.“ *Oscar Paradela, Leiter Controlling/IT, Europcar AMAG Services AG (New Tools for Data Analyses in Excel 2013/16)*

## CONTACT AND FURTHER INFORMATION

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**Since our website is (so far) only in German, we can offer you to create individual agendas like this one on request.**

## EXPERIENCE AS EXCEL-TRAINER

Stephan Nelles developed quite a number of seminars and held over 500 training days over the last 9 years, of which 113 were individually tailored for companies, 57 were concerned with the application of the Power-BI-Tools PowerPivot and PowerQuery. Detailed brochures of his current seminars you'll find on our website under [www.exbase.de/excel](http://www.exbase.de/excel).

For Coca-Cola Stephan Nelles trained employees at several European locations. The training is now web-based and consists of 50 Office-modules. Employees worldwide participate in the webinars. As a member of the global QMP-Team he is responsible for the reporting of quality data. Besides Coca-Cola Stephan Nelles held inhouse-seminars for Merck, Seat, Knorr Bremse and Siemens. The feedback we get from companies and participants of the seminars is very positive. More information you'll find in the category „Stephan Nelles“ on our website.

## EXPERIENCE AS DEVELOPER OF EXCEL TOOLS AND POWER-BI SOLUTIONS

### QMP Reporting Tool

BI solution based on PowerQuery and PowerPivot. The tool has been developed for Coca-Cola and is used in all European markets. Uses PowerQuery and PowerPivot to consolidate data from 3 data sources (Business Objects reports and databases). Reproduces a business model to calculate and follow-up on drink quality and maintenance of equipment in McDonald's restaurants worldwide. Became global standard as data analysis and reporting tool/dashboard in December 2015.

### Conversion Dashboard

Dynamic dashboard that shows various KPI's to analyse conversion in a sales funnel from webpage visit to test drive and offer. Dashboard allows selection of various carlines, time ranges and contains a highly variable forecast which reflects pre-defined time range but also manual data entry. Recommended by SEAT Europe as best practice solution in December 2015. Further development in December 2015 as weekly dashboard.

### Project Controlling Desktop

Project controlling tool and dashboard that analysis project hours and all project costs and focusses on various KPI like project yield, cost to complete, budget versus actuals on a classical one pager. Tracks the financial return of project at all stages from offer to PO to change request and project completion. Developed with PowerPivot.

### Working Hours Analysis Tool

A dynamic analysis tool developed for the work council of Coca-Cola Germany. Based on PowerQuery and PowerPivot. Consolidates all time sheets and delivers results in a dynamic dashboard. Access to the tool via SharePoint.

### TC Cost Controlling Tool

SharePoint-based BI-Tool to analyse telecommunications costs. Based on PowerQuery and PowerPivot.

More projects and screenshots you'll find under the following link: [www.exbase.de/excel/start/referenzen](http://www.exbase.de/excel/start/referenzen)

## AUTHOR OF SPECIALISED BOOKS

### Excel 2013 im Controlling

Enhancement of the previous edition „Excel 2010 im Controlling“. Reflects especially Excel 2013 ability to develop data models and self-BI solutions with PowerPivot. Introduces the new DAX formulas and dashboard tools like slicers and KPI.

### Excel 2016 im Controlling

The new edition of this Excel controlling classic is dedicated to Excel 2016 new capabilities. As there are: PowerPivot and PowerQuery integration, new dashboard and charting options in Excel and the Power BI Desktop.

