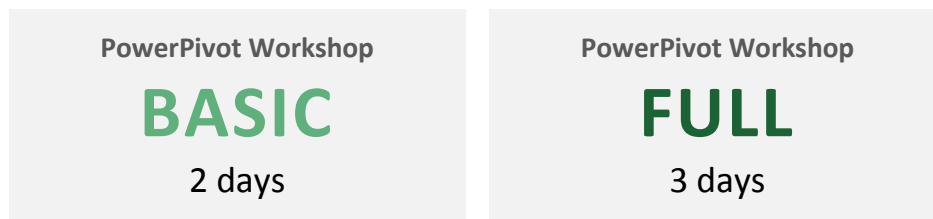




PowerPivot Workshop

The workshop covers PowerPivot topics, starting from basic concepts and moving on up to complex data models and DAX formulas, and including basic SharePoint configuration and usage. Although focused on PowerPivot integration, the workshop does not cover all the SharePoint topics that are needed to install a SharePoint server. This would need a complete course by itself and should be targeted to a more technical audience.

The workshop came in two different versions:



The workshop outline is the following:

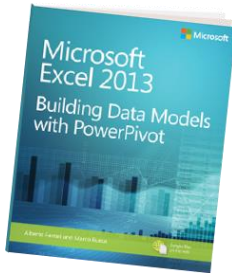
- Introduction to PowerPivot and Data Models in Excel 2013
- Data loading techniques with different sources
- Data Modeling basics for building PowerPivot data models
- Calendar computation and data modeling best practices
- SharePoint integration
- Creating Power View reports
- Shaping Reports
- Evaluation Contexts and CALCULATE *(FULL version only)*
- Using DAX as a Query Language *(FULL version only)*
- Advanced DAX techniques *(FULL version only)*
- DAX Patterns *(FULL version only)*



The **main goal** of the course is to facilitate the **use of PowerPivot in the real world**. Thanks to **hands-on labs**, you will make practice in creating data models, reports and custom calculations.

It is designed for professionals who want to use PowerPivot full capabilities while, at the same time, it permits to identify those scenarios where its use might not be convenient.

The course might be useful in a pre-sale phase, when the customer is interested in adopting PowerPivot and SharePoint and in evaluating the power of the tools (in that case, we might arrange a shorter single-day workshop). The course might be also useful in a post-sale phase, when the customer is interested in leveraging the full potential of PowerPivot.



The course is based on the book “[Microsoft Excel 2013: Building Data Models with PowerPivot](#)” by Marco Russo and Alberto Ferrari.

Each participant will receive a copy of the book!

The workshop is aimed at these different types of professionals:

Excel Power Users

Users that employ Excel on a daily basis and want to exploit the full power of PowerPivot to improve their reporting capabilities.

The potential participant has a good experience of Excel, some knowledge of relational database theory is recommended but not strictly required.

IT and BI People

Professionals that are in charge of the data warehouse management of their company and need to understand how to provide support to analysts who need to extract data from PowerPivot.

Participants will learn how to adapt their existing data warehouse so that PowerPivot users will be able to find the data they need. They will also learn how to shape data correctly for PowerPivot usage, including the relational data model and any OLAP cube used by PowerPivot.

The workshop can be provided in two ways:

- **In a typical open class format of 5 to 20 participants** from different companies and backgrounds. In this case, we will follow the default course program with all the examples, which are based on the AdventureWorks database. The duration is typically 3-days, even if a shortened 2-days version is available for sporadic Excel users that are not interested in writing calculations in DAX.
- **As a single company workshop.** In this case, we can either follow the standard course or, if required and upon previous agreement, we can prepare a range of examples taken from the company data warehouse or OLTP system. At the end of the course, the participants will have a set of workbooks that would be already working on their data.
If this is the preferred option, the customer will need to supply us with all the data needed to create the examples and with the relevant documentation describing the database structure and the required analysis at least ten days prior to the beginning of the course. As an alternative, we can extend the course by one day and provide this service at the customer’s site, working side by side with the participants to build a set of startup workbooks.

The number of instructors depends on the number of participants. One instructor suffices if the workshop size does not exceed eight to ten participants. For larger classes, two instructors are preferable. If the class size exceeds twenty, it is better to create two distinct workshops.

Although the full material of the workshop requires three days to be covered comprehensively including hands-on-labs, it is possible to arrange a different organization of the topics and provide specialized workshops for audiences. If the participants are already basic PowerPivot users, we can provide advanced topics in one or two days. If the audience is interested in a simple introduction to features available, we can provide it with a single day, even if we strongly suggest first-time users to follow the entire course.

PowerPivot Workshop BASIC outline:

- **Introduction**
 - What is PowerPivot?
 - What is a PivotTable?
 - Example with classical Excel PivotTable
 - First Steps with PowerPivot
 - Example with PowerPivot
- **Basic PowerPivot Concepts**
 - Formatting Numbers
 - Handling Technical and Useless Columns
 - Understanding Calculated Columns
 - Using Lookup Tables
 - Understanding Calculated Fields
 - Handling Many Tables
 - Refreshing Data
 - Using Slicers
- **SharePoint Integration**
 - PowerPivot for SharePoint
 - PowerPivot Gallery
 - Publishing an Excel Workbook
 - Parameters Pane
 - PowerPivot Data Refresh
 - Data Connections
 - User Credentials
- **Power View**
 - Creating a Power View Report
 - Inserting New Views in Power View
 - Type of Charts & Maps
 - Applying Filters to Power View Reports
 - Creating Tiles
- **Shaping Reports**
 - Defining KPIs
 - Creating Hierarchies
 - Properties for Power View Reports
 - Named Sets in Excel
 - Using Perspectives
 - Drillthrough with PowerPivot
- **Loading Data and Models**
 - Understanding Data Connections
 - Different Kind of Connections
 - Using Existing Connections
 - Loading Tables from SQL Server
 - Filtering Options
 - Loading and Detecting Relationships
 - Loading from Views
 - Loading from Access
 - Issues in the Query Designer
 - Best Practices
 - Loading Data from Analysis Services
 - The MDX Query Designer
 - Handling of Keys in SSAS
 - OLAP cube or DataMart?
 - Using Linked Tables
 - Loading from Excel Workbooks
 - Loading from Text Files
 - Using the Schema.INI configuration
 - Using Copy & Paste Operations
 - Loading From Data Feeds
 - Reporting Services Reports
 - Internet Data Feeds
 - Windows Azure Data Market
 - Loading From SharePoint
- **Understanding Data Models**
 - What is a Data Model?
 - Why PowerPivot Users need Data Modeling?
 - Physical and Logical Data Models
 - Normalization and Denormalization
 - Empty and Default Values
 - Understanding How and When to Denormalize
 - SQL Query Designer as a Data Modeling Tool
 - Different kinds of Joins
 - Setting Relationship Manually
 - Understanding OUTER Joins

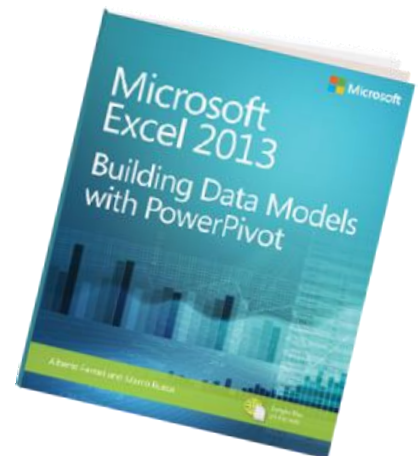
- **Introduction to DAX**
 - Calculation Foundations
 - DAX Data Types
 - DAX Operators
 - Calculated Columns Examples
 - Calculated Fields Examples
 - Introduction to the Execution Context (Row and Filter)
 - Choosing Between Calculated Columns and Calculated Fields
 - Handling Errors in DAX
 - Common DAX Functions Examples
 - Statistical and Logical Functions
 - Information Functions
 - Mathematical Functions
 - Text Functions
 - Date and Time Functions
- **Table Functions and CALCULATE**
 - Filtering Table with FILTER
 - Mixing ALL and Other Filters
 - Use of RELATEDTABLE
- CALCULATE Examples and Relationships
- **Time Intelligence in PowerPivot**
 - Why a Calendar Table is Useful
 - Attribute Consolidation
 - Common Calendar Calculations
 - Creating a Calendar Table with Excel
 - Excel Tips to Create a Calendar Table
 - Working Days Calculation
 - Common Calendar Calculations
 - X To Date (YTD, QTD, MTD)
 - Same Period Last Year
 - Other Custom Aggregation Function
 - Delta Over Previous Year
- **Basic DAX Patterns**
 - Banding in PowerPivot
 - New and Returning Customers
 - Compare Budget and Sales
 - Many-to-Many Relationships
 - Merge Values from Different Tables
 - ABC / Pareto Analysis

PowerPivot Workshop FULL outline:

- **All the contents from the BASIC version**
- **Understanding the Evaluation Context**
 - What is the Row Context
 - What is the Filter Context
 - Filter Context on a Single Table
 - Updating Filter Context on a Single Table
 - Evaluation Context in Detail
 - Filter Context + Row Context
 - Updating the Filter Context
 - Restricting and Enlarging the Context
 - Transform Row Context into Filter Context
 - The EARLIER and EARLIEST Functions
 - What is the EARLIER Function
 - Using EARLIER and EARLIEST Functions
 - Evaluation Context And Relationships
 - Row Context for Multiple Tables
 - Filter Context for Multiple Tables
 - Updating the Filter Context with Relationships
- **CALCULATE**
 - Introduction to Calculate
 - Examples of CALCULATE
 - Detailed Analysis of CALCULATE Behavior
- **Advanced DAX Techniques**
 - Statistical Functions
 - Ranking Over a Calculated Fields
 - Using KEEPFILTERS
- **Advanced Time Intelligence**
 - Semi Additive Calculated Fields
 - Closing Balance Over Time
 - OPENINGBALANCE/CLOSINGBALANCE
 - Event in Progress Calculation
 - Calculation Over Weeks
- **DAX as a Query Language**
 - EVALUATE syntax
 - Using SUMMARIZE and ADDCOLUMNS
 - Using GENERATE
 - Creating linked back tables
- **Advanced DAX Patterns**
 - Inside Many-to-Many Relationships
 - Basket Analysis
 - Currency Conversion

Learn PowerPivot directly from the authors of "Microsoft Excel 2013: Building Data Models with PowerPivot" by Microsoft Press!

www.powerpivotworkshop.com



Marco Russo

Marco is a Business Intelligence consultant and mentor. His main activities are related to data warehouse relational and multidimensional design, but he is

also involved in the complete development lifecycle of a BI solution. He has particular competence and experience in sectors like financial services (including complex olap designs in banking area), manufacturing and commercial distribution.

He achieved the unique SSAS Maestro certification and is also a Microsoft Certified Trainer with several Microsoft Certified Professional certifications.

More info at

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Alberto Ferrari

Alberto is a Business Intelligence consultant. He shares his interests in two main areas: methodological approach to the BI development lifecycle and performance tuning of ETL and SQL code.

His main activities are with SSIS and SSAS for the bank, manufacturing and statistical areas. He is also a speaker in international conferences like European PASS Conference and PASS Summit.

He achieved the unique SSAS Maestro certification.

More info at

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