



**Balanced Scorecards and Operational Dashboards with Microsoft Excel  
HDT924  
Four Days**

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**Prerequisites**

Students should have experience with any relational database management system as well as experience with data warehouses and star schemas. Students should also have experience with Microsoft Excel. It would be helpful if students are involved with delivering business intelligence.

**Who Should Attend**

This course is targeted at business intelligence developers and users, data warehouse developers, star schema and cube developers, data modelers, data base analysts, and any other personnel who need to design and implement scorecards and dashboards.

**Course Description**

This course provides students with the skills necessary to design and implement scorecards and dashboards. It is based on the Ron Person book Balanced Scorecards and Operational Dashboards With Microsoft Excel published in 2009 by Wiley Publishing, Inc, ISBN: 978-0-470-38681-1.



## Balanced Scorecards and Operational Dashboards with Microsoft Excel HDT924

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### Course Topics

- Accelerating Strategic Performance
- Developing Your Strategic Foundation
- Preparing to Build Your Balanced Scorecard
- Step-by-Step to Building Your Strategy Map
- Step-by-Step from Strategy to Action
- Step-by-Step to Selecting Metrics and Setting Targets
- Step-by-Step to Developing Your Implementation Plan
- Step-by-Step to Roll-Out and Strategic Reviews
- Developing Executive and Operational Dashboards
- Mapping Your Operational Processes
- Identifying Critical Metrics and Key Performance Indicators
- Creating Dashboards for Decision Making
- Drawing Process and Strategy Maps
- Using Microsoft Excel for Balanced Scorecards and Dashboards
- Text-Based Dashboards
- Custom Labels and Formatting
- Working with Data That Changes Size
- Working with Lists and Tables of Data
- Creating Miniature Charts and Tables
- Controlling Charts with Menus, Combo Boxes, and Buttons
- Working with PivotTables
- Smoothing Data and Forecasting Trends
- Identifying Targets and Displaying Alerts
- Building Powerful Decision Making Charts
- Drilling to Detail
- Using Excel Add-Ins for Extra Capabilities
- Finishing Touches
- Data Integration Methods
- Publishing Balanced Scorecards and Dashboards



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- I. Accelerating Strategic Performance**
  - A. Managing With a 500-Year-Old System
  - B. The Failure of Modern Management Systems
  - C. A Modern Strategic Management System
  - D. Why Use a Balanced Scorecard?
  - E. Building a Balanced Scorecard
  - F. Does the Balanced Scorecard Guarantee Business Success?
  - G. Does the Balanced Scorecard Really Work?
  - H. Do Small and Medium-Sized Businesses Benefit from the Balanced Scorecard?
  - I. Is the Balanced Scorecard Worth Developing?
  
- II. Developing Your Strategic Foundation**
  - A. Developing Your Strategic Foundation
    - 1. Values
    - 2. Mission
    - 3. Vision
  - B. Developing Your Strategic Assessment
    - 1. Defining Your External Environment by Using PESTEL
    - 2. Defining Your Industry Environment with Porter's 5 Forces
    - 3. Defining Your Strengths and Weaknesses with the Balanced Scorecard SWOT
  - C. Developing Your Strategic Destination Statement
  
- III. Preparing to Build Your Balanced Scorecard**
  - A. Why Do You Want to Use a Balanced Scorecard?
  - B. Is Your Organization Ready for the Balanced Scorecard Journey?
    - 1. Senior Executive Commitment
    - 2. Experienced Facilitator or Consultant
    - 3. Executive Sponsor Commitment
    - 4. Executive Time and Commitment
    - 5. Participative Culture with Open Communication
  - C. You Must Make Your Case for Change
  - D. Motivating Executives
  - E. Building Balanced Scorecard Teams
  - F. Background Research
  - G. Interviewing Executives



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### **IV. Step-by-Step to Building Your Strategy Map**

- A. What Is a Strategy Map?**
  - 1. Leveraging Your Strategy Map
- B. Perspectives: Monitoring Your Strategy from Different Points of View**
- C. Strategic Themes: Concentrating Resources and Momentum Along Specific Themes**
- D. Objective and Causal Links: Modeling What Drives Your Business Success**
- E. Selecting a Strategy Map Facilitator**
- F. Step-by-Step to Creating Your Strategy Map**
  - 1. The Straw Dog Approach
  - 2. The Intensive Discussion Approach
  - 3. Conducting Strategy Map Sessions
  - 4. Selecting Strategic Theme Sponsors

### **V. Step-by-Step from Strategy to Action**

- A. Turning Your Strategy Map into Measurable Action**
- B. Strategic Theme Teams**
- C. Motivating and Educating the Strategic Theme Teams**
- D. Brainstorming Initiatives**
- E. Developing a Robust List of Initiatives**
- F. Prioritizing Initiatives**

### **VI. Step-by-Step to Selecting Metrics and Setting Targets**

- A. Achieving Balance in Your Balanced Scorecard**
- B. The Right Number of Measures**
- C. If You Have More Than the “Critical Few,” You Lose**
- D. Lead and Lag Metrics: Drivers and Results**
- E. Sample Objectives and Metrics**
- F. Step-by-Step to Selecting Your Metrics**
- G. Defining the Metric with a Metric Definition**
- H. Look Out! What You Measure Is What You Get!**
- I. Critical Questions to Ask About Your Measures and Metrics**
- J. Setting Targets**
  - 1. Setting Target Values
  - 2. Setting Intermediate Targets
  - 3. Moving Toward a Target Will Not Be at a Constant Rate



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- VII. Step-by-Step to Developing Your Implementation Plan**
  - A. Step-by-Step to Translating Initiatives into Projects
  - B. Monitoring Initiatives in Progress
  
- VIII. Step-by-Step to Roll-Out and Strategic Reviews**
  - A. Creating a Culture Focused on Strategy
  - B. Strategy Review Meeting
    - 1. Preparing for the Strategy Review Meeting
    - 2. Facilitating the First Meeting
  - C. Communication, Training, and Roll-Out
    - 1. Communication
    - 2. Communication Media
    - 3. Translating Strategy Maps into Visual Metaphors
    - 4. Training
  
- IX. Developing Executive and Operational Dashboards**
  - A. Why Are Dashboards Used with Increasing Frequency?
  - B. What Are the Differences Between Dashboards and Scorecards?
  - C. The Challenges in Developing Dashboards
  - D. Developing Your Dashboard
  
- X. Mapping Your Operational Processes**
  - A. Before You Map, Know Why
  - B. Dashboards and Six Sigma
  - C. Types of Process Mapping
    - 1. Six Sigma SIPOC Mapping
    - 2. Value Stream Mapping
  - D. Step-by-Step to Building a Map
  
- XI. Identifying Critical Metrics and Key Performance Indicators**
  - A. General Rules for Metrics in Operational Dashboards
  - B. Interview the Decision Makers
  - C. Identify Metrics Using Your Map
    - 1. Step-by-Step to Identifying Critical Metrics
    - 2. Brainstorming and Identifying Metrics Using an Ishikawa or Fishbone Diagram
    - 3. Selecting a Metric
  - D. Cross-Check Your Metric
    - 1. What's Simple Can Be Difficult, and What's Difficult Can Be Simple



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### **XII. Creating Dashboards for Decision Making**

#### **A. Step-by-Step to Creating Dashboards That Aid Decision Making**

1. Make Your Dashboards Actionable

#### **B. Rules of Design**

1. Keep It Simple and Uncluttered
2. Kill Cute Dashboards
3. Command the Viewer's Eye
4. Limit Feature Creep
5. Use a Clean, Consistent Visual Layout
6. Put One Decision on One Page
7. Make Dashboards Accessible to Colorblind and Aging Eyes

#### **C. Tips on Graphical Elements**

1. Use Your Client's Branding
2. Color Palettes and Intensities
3. Get Rid of Chart Junk
4. Mute the Less Important
5. Use the Correct Chart Type
6. Shadow Bands in Tables
7. Legends
8. Text Orientation

#### **D. Some Important Sources on the Art and Science of Visualizing Data**

1. Excel Charting Techniques
2. The Art of Visualizing Data

### **XIII. Drawing Process and Strategy Maps**

#### **A. Which Drawing Tool Should You Use?**

1. Displaying the Drawing Toolbar
2. Drawing Objects and Connectors
3. Adding Text to Objects or Connectors
4. Moving Objects or Connectors
5. Formatting Objects or Connectors
6. Grouping Objects So That They Act As One
7. Using Grid and Judge for Accurate Positioning
8. Controlling Objects That Overlap
9. Saving Time When You Draw

#### **B. Drawing with SmartDraw**

#### **C. Drawing with Microsoft Visio**



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### **XIV. Using Microsoft Excel for Balanced Scorecards and Dashboards**

- A.** Excel Is the Most Widely Used Balanced Scorecard Software
- B.** Consider the Trade-Offs Between Excel and Large BI Systems
- C.** Disadvantages of Excel
  1. Many Versions of One Truth
  2. Technical Scalability vs. User Scalability
  3. Hidden Errors
  4. Spreadsheets Spawn Spreadsheets
  5. The Ineluctable Modality of User-Built Conundrums
- D.** Advantages of Using Excel
  1. Get It Done Now
  2. Prove the Business Intelligence and Dashboard Concept
  3. Experienced Users
  4. Total Costs for Scalability
  5. Excel Is Flexible and Extensible
  6. Excel's Chart Engine Is a Powerful Standard
- E.** When to Use Excel
- F.** When not to Use Excel
- G.** Solutions

### **XV. Text-Based Dashboards**

- A.** Alerting with Conditional Formats
  1. Conditional Formatting with Earlier Versions of Excel
  2. Conditional Formatting with Excel 2007
- B.** Creating In-Cell Charts with Text
  1. Creating Text Charts with Earlier Versions of Excel
  2. Creating Data Bars with Excel 2007
- C.** Alerting with Conditional Text Icons
  1. Conditional Formatting with Earlier Versions of Excel
  2. Conditional Formatting with Excel 2007



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### **XVI. Custom Labels and Formatting**

- A. Combining Numbers, Text, and Dates to Create Custom Labels**
  - 1. Joining Text and Custom-Formatted Numbers
- B. Time and Date Calculations**
  - 1. Calculating the Beginning and End of Any Month
  - 2. Creating a Month Series
  - 3. Calculating the Beginning and End of a Quarter
  - 4. Automatically Updating Quarterly Titles on the Category (X) Axis
- C. Scaling Numbers with Formatting**
  - 1. Scaling Charts and Sheets Separately
- D. Creating Custom Titles and Floating Text**
  - 1. Creating Dynamic Chart Titles
  - 2. Creating Floating Titles in Charts
  - 3. Creating Dynamic Titles That Float in Worksheets
  - 4. Rotating Text, Shapes, and Charts in Any Direction
  - 5. Creating Custom Data Labels
  - 6. Creating Pop-Up and Alert data Labels
- E. Creating New Color Palettes**
  - 1. Creating a Custom Color Palette in Excel
  - 2. Matching Your Dashboard to the Corporate Identity
  - 3. Transferring Color Palettes Between Workbooks
  - 4. Creating Aesthetically Pleasing Color Palettes
  - 5. Selecting Predesigned Color Palettes
  - 6. Capturing Colors from Onscreen





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### **XVII. Working with Data That Changes Size**

- A. Naming Ranges for Ease of Use and Functionality**
  - 1. Creating Named Ranges
  - 2. Creating Dynamic Range Names that Automatically Adjust When the Size of Data Changes
  - 3. Creating Charts That Expand to Include New Data
  - 4. Dynamically Changing the Start Date of a Chart
  - 5. Dynamically Changing the Start Date and Width of a Chart
  - 6. Dynamically Charting the Last 13 Months of Data
  - 7. Creating Dynamic Range Names for Lists

### **XVIII. Working with Lists and Tables of Data**

- A. Banish VLOOKUP—Use INDEX and MATCH**
- B. The Key to Creating Most Interactive Dashboards**
  - 1. Using a Keyword to Retrieve and Chart Data
  - 2. Adding a Drop-Down Selection List to Make Retrieval Easier
  - 3. Retrieving Data Given Multiple Keywords
  - 4. Retrieving Multiple Rows Using a Single Keyword
  - 5. Retrieving Data with a Two-Way Lookup
- C. Sorting Lists by Formula**

### **XIX. Creating Miniature Charts and Tables**

- A. Using Miniature Charts, Tables, and Sparklines for Greater Information Density and Improved Layout**
- B. Creating Miniature Charts from Standard Excel Charts**
  - 1. Removing Titles, Gridlines, and Legends
  - 2. Formatting the Y-Axis to Remove Unnecessary Scales and Width
  - 3. Reducing the Size and Width of Y-Axis Numeric Values
  - 4. Formatting the X-Axis
  - 5. Formatting Multiple Miniature Charts
- C. Creating Sparklines**
- D. Excel's Amazing Camera Tool**
  - 1. The Dark Side of Excel's Camera Tool
  - 2. Taking Pictures with the Camera Tool
  - 3. Using Camera Pictures of Charts, Tables, and Miniature Charts
  - 4. Simultaneously Formatting the Size of Multiple Charts or Camera Pictures



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- XX. Controlling Charts with Menus, Combo Boxes, and Buttons**
  - A. Adding Combo Boxes, Lists, Check Boxes, and More to Your Dashboards
  - B. Selecting Data with a Combo Box or List
  - C. Selecting Data with Multiple Criteria Using Multiple Combo Boxes
  - D. When to Use a Data Validation List or Combo Box?
    - 1. Advantages to Data Validation
    - 2. Disadvantages to Data Validation
    - 3. Advantages to Combo Box
    - 4. Disadvantages to Combo Box
  - E. Creating Dynamic Cascading Combo Boxes or Lists
  - F. Using Option Buttons
  - G. Displaying or Hiding Data with a Check Box
  - H. Scrolling Charts Through Time with a Slider Bar
  
- XXI. Working with PivotTables**
  - A. Basic Concepts of PivotTables
  - B. Creating an Auto-Expanding Database Name
  - C. Using PivotTable Results in Dashboards
    - 1. Retrieving a Single Cell of Data from a PivotTable
    - 2. Dynamically Retrieving Data from a PivotTable
    - 3. Building a Safe User-Controlled PivotTable Display
  - D. Drilling Down to Detail with PivotTables
  - E. Updating the PivotTable Linked to Internal or External Data
  
- XXII. Smoothing Data and Forecasting Trends**
  - A. Smoothing Erratic Data
    - 1. Smoothing Data with Simple Moving Averages
    - 2. Smoothing with Weighted Moving Averages
    - 3. Exponential Weighted Moving Averages
  - B. Adding the Analysis ToolPak to Excel
    - 1. Exponential Smoothing with the Analysis ToolPak
  - C. Forecasting Trends
    - 1. Forecasting with Worksheet Functions
      - a. Forecasting Linear Trends with TREND
      - b. Forecasting Trends with GROWTH



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### **XXIII. Identifying Targets and Displaying Alerts**

- A. Charting Target Values
- B. Charting Alerts with Conditional Colors
- C. Charting Alerts for the Top/Bottom n, Quartiles, and Percentiles
- D. Charting Alerts with Line and XY Scatter Diagrams
- E. Adding a Visual Indicator to Top/Bottom n, Quartile, and Percentile Charts
- F. Alerting with E-mailing

### **XXIV. Building Powerful Decision Making Charts**

- A. Seeing a Full Statistical Picture with a Box-and-Whisker Plot
- B. Bullet Charts—A Better Alternative to Gauges
- C. Pareto Charts Show What Is Most Important
- D. Variance Charts Make a Difference
- E. Project Your Projects with Gantt Charts
- F. Project Variance Gantt Charts
- G. Control Charts

### **XXV. Drilling to Detail**

- A. Navigating
  - 1. Navigating with Simple Hyperlinks
  - 2. Navigating with a Drop-Down Menu
- B. Drilling-Down to Detail
  - 1. Creating Pseudo Drill-Downs with Hyperlinks
  - 2. Drill-Downs in PivotTables
  - 3. Drilling into a Data List by Clicking on a Row

### **XXVI. Using Excel Add-Ins for Extra Capabilities**

- A. Adding MicroCharts for an Information-Rich Display
  - 1. MicroChart Demonstration
    - a. Creating a MicroChart
    - b. Formatting a MicroChart
    - c. Distributing a Spreadsheet with MicroCharts
- B. Creating Flashy Interactive Dashboards with Xcelsius Engage
  - 1. A Demonstration of Xcelsius Engage
    - a. Creating a Model to Select and Chart Data
    - b. Adding a Trend Line to the Chart
    - c. Publishing the Dashboard for Distribution



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### **XXVII. Finishing Touches**

- A. Adding Context and Comments with Briefing Books
- B. Displaying Pop-Up Content and Dynamic Help
- C. Controlling Dashboard Display
- D. Hiding Worksheets
- E. Sending Conditional E-mails from Dashboards
- F. Adding Headers and Footers
- G. Locating and Removing Phantom Links
- H. Protecting content, Worksheets, and Workbooks
- I. Restricting the User's Range

### **XXVIII. Data Integration Methods**

- A. Manual Data Entry or Automated Data Integration?
- B. Manual Data Entry for Dashboards
- C. Automating data Retrieval with Text Files
  - 1. Creating Text Data Files
  - 2. Step-by-Step to Importing a Text Data File
- D. Automating Data Retrieval with Databases
  - 1. Step-by-Step to Importing Data from a Relational Database
- E. Importing Data Using a PivotTable
  - 1. Step-by-Step to Importing Data to a PivotTable
- F. Refreshing Data Automatically
- G. Linking Imported Data to Your Dashboard
- H. What Is OLAP and When Should You Use It



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### **XXIX. Publishing Balanced Scorecards and Dashboards**

- A. Publishing Directly in Excel**
  - 1. Architecture
- B. Publishing Multi-Dashboard Systems**
  - 1. Hierarchy of Views
  - 2. Deciding How to Publish Your Scorecard or Dashboard
  - 3. Balanced Scorecard in Excel 2007
  - 4. Creating Less Complex Balanced Scorecards in PowerPoint
  - 5. Creating Complex or High-Security Balanced Scorecards in PDF
- C. Publishing in PowerPoint**
  - 1. Advantages and Disadvantages of Publishing in PowerPoint
  - 2. Architecture
  - 3. Step-by-Step to Creating the PowerPoint Presentation
- D. Publishing in Adobe Acrobat**
  - 1. Advantages and Disadvantages of Publishing in PDF
  - 2. Architecture
  - 3. Step-by-Step to Publishing in Adobe PDF