Part 1: TDWI Requirements Gathering: Correct and Complete Requirements for BI and Analytics Systems

Module 1: Requirements, Projects, and Lifecycles
Kinds of Requirements
- A Multilevel View of Requirements
- Business Requirements
- Functional Requirements
- Technical Requirements

Project Types
- Three Dimensions

Lifecycles
- Waterfall
- Iterative
- Agile
- DevOps

Requirements Before Design
- Architectural Requirements
- Project Requirements

Module 2: Kinds of BI and Analytics Requirements
The Scope of Requirements
- An Overview
- Business Perspective
- Project Perspective

Classifying Requirements
- Business Capability Requirements
- Business Value Requirements
- Governance Requirements
- Data Management Requirements
- Business Services Requirements
- Business Applications Requirements
- Data Preparation Requirements
- Service-Level Requirements
- Technology Requirements

A Requirements Checklist
- Summary

Scenario
- for Exercises 1 through 4
Exercise One
  • Business Capabilities

**Module 3: Project Requirements Gathering**

Requirements Challenges
  • Setting the Scope
  • Aligning to the Lifecycle
  • Asking the Right Questions

Requirements Questions
  • Surveying the Landscape
  • Making It Personal
  • The Current State - Data and Analysis
  • The Current State - Existing Reports
  • The Future State

BI and Analytics Products
  • Business Capabilities
  • BI Product Example

Exercise Two
  • BI Products

Iterative BI Requirements Gathering
  • Product Components
  • From PBS to Specification
  • A Functional Checklist
  • A Technical Checklist

Exercise Three
  • Product Breakdown Structure

Agile BI Requirements Gathering
  • Backlog, Stories, and Discussions
  • Checklists

Analytics Requirements Gathering
  • Modeling Lifecycle (CRISP-DM)
  • Requirements Framework

**Module 4: Requirements Gathering Techniques**

Requirements as a Human Process
  • People and Requirements Gathering
  • Roles and Skills
  • Identifying Stakeholders
  • Busy People vs. Involved Participants
  • Some of the Challenges

Ten Techniques
  • An Overview
Module 5: Requirements Mgmt Techniques
Requirements as a Systems Process
- The "Why" and "What" of Requirements Management
Documenting Requirements
- Specifications
- Models
- Stories
Testing Requirements
- Clarity, Correctness, and Measurability
- Completeness
Exercise Four
- Requirements Specification
Managing Requirements
- Scope, Impact, Feasibility, and Change
- Summary

Module 6: Summary and Conclusion
Summary of Key Points
- A Quick Review
References and Resources
- To Learn More
Close the Class
- Evaluations, Thanks, etc.


Module One: Dashboards: What and Why
Defining Dashboards
- Continuum
- Self-Service Dashboards
• Engineered Dashboards  
• Scorecard Definition  

Dashboards in Context  
• Business Context  
• BI and Analytics Context  
• Technology  

Discussion  
• Dashboard Use  

**Module Two: Dashboard Foundations**  
Measures and Metrics  
• Measurement Concepts – Why Measure?  
• Measures, Metrics, Performance Indicators, and KPIs  

Implementing Metrics  
• Process Overview  
• Useful Metrics  
• Definition – Naming and Description  
• Definition – Calculation  

Metrics Applications  
• Business Impact  
• Capabilities  

**Exercise 1**  
Dashboard Brainstorm  

Visualization Foundations  
• Choosing the Right Visual  
• Example  

**Module Three: Dashboard Design Techniques**  
Multiple Paths  
• Self-Service Vs. Engineered  
  
Engineered Dashboard Development  
• From Planning to Production  
• The Design Phases  

Dashboard Requirements  
• Business Scope  
• Stakeholders  
• Technical Requirements  
• Performance Indicators  
• Cascading and Dependency  

Dashboard Design  
• Design Tips  
• Item Placement  
• Element Layout
- Filters
- Drill-Down
- Help
- Keep it Simple
- Adapt Charts to Fit Viewers
- Formatting Tables
- Pre-attentive Processing
- Choosing Fonts

Dashboard Examples
- Balancing Sparsity and Density
- A Good Example
- A Bad Example

**Exercise 2**
Critiquing Dashboards
Self-Service Dashboards
- Process Framework
- Collaboration

**Module Four: Performance Management**

Defining Performance Management
- Performance + Management
- Why Performance Management?

Performance Management Processes
- Goal Setting and Measurement
- Analysis and Action
- Monitoring and Feedback

The Balanced Scorecard
- PM Foundation
- Variations

**Exercise 3**
Scorecard Structure
Strategy Mapping
- A Cause-and-Effect View of the Business
- Map Components
- From Balanced Scorecard to Strategy Map
- Leading and Lagging Indicators

Performance Indicators
- From Mapping to Metrics
- From Nodes to Numbers
- Using the Business Model Canvas
- KPI Library
- Choosing KPIs
Business Impact
  • Feedback and Evolution

**Module Five: Summary and Conclusion**
Summary of Key Points
  • A Quick Review
References and Resources
  • For More Information

**Part 3: TDWI Data Visualization Principles and Practices**

**Module 1 - Data Visualization Concepts**
Data Visualization Today
  • Data Visualization Roles
  • Data Visualization Uses
  • Communicating with Visuals
  • Visualization and Stories
Data and Visualization
  • Finding the Right Data
  • Data Content
  • Categorical and Aggregate Data
Data Visualization Components
  • The Parts of Data Visuals
Visual Cues
  • Placement
  • Lines
  • Shapes
  • Color
  • Human Perception
Coordinate Systems
  • Cartesian Coordinates
  • Polar Coordinates
  • Geographic Coordinates
Measurement Scales
  • Linear and Logarithmic Scales
  • Ratio and Interval Scales
  • Ordinal and Nominal Scales
  • Percent Scales
  • Time Scales
Visual Context
  • Explicit and Implicit Context

**Module 2 - Fundamentals of Visualization**
Data Visualization Methods
  • How We Visualize
• Tables
• Plots
• Maps
• Infographics
• Specialty Graphs

Data Visualization Standards
• Good Design
• Chart Anatomy
• Chart Junk
• Color
• Size and Scale
• Integrity
• Two-Dimensional Versus Three-Dimensional
• Data-Ink Ratio
• Data Richness
• Encoding and Cues
• Legibility

Visualization with Purpose
• What Do You Want to Show?
• Comparisons
• Proportions
• Relationships
• Patterns

Data Visualization Development
• Purpose
• Message
• People
• Data Properties
• Questions and Iteration
• Visual Method Choice
• Test

**Module 3 – Data Visualization Techniques**

Visualization Techniques
• What We Visualize

Visualizing Comparisons
• Comparison Data
• Dimensions
• Outliers
• Visual Data Methods for Comparison
• Examples

Visualizing Proportions
• Proportion Data
• Parts to a Whole
• Proportions over Time
• Visual Methods for Proportions
• Examples
Visualizing Relationships
  • Relationship Data
  • Correlation
  • Distribution
  • Spatial Relationships
  • Visual Methods for Relationships
  • Examples

Visualizing Patterns
  • Pattern Data
  • Points in Time
  • Continuous Data
  • Visual Methods for Patterns
  • Examples

Module 4 - Visualization and Business Intelligence

Visualization and BI
  • Supporting BI

Analytics
  • From Exploration to Models
  • From Questions to Answers

Visual Reporting
  • Dashboards, Scorecards, and Reports
  • Promoting Interaction
  • Animation

Infographics
  • Visual Design plus Graphic Design
  • Simple Graphs Versus Infographics
  • Design
  • Team and Process

Data Storytelling
  • Statistics Versus Stories
  • Visual with Narrative

Module 5 - Tools and Resources

Data Visualization Tools
  • A Technology Overview

Best Practices in Visualization
  • Advice from the Master

Workshop
  • Working with Your People, Projects, Processes, and Data
  • Choose from a provided list of topics for a tailored workshop. Workshop topic selection to be determined during pre-course discussion and planning with instructor. (It is recommended that you select two topics for approximately 4.5 hours of workshop activity.)