

## Course Outline

### Module 1

#### The Dimensional Model & Modern BI

- Dimensional Models
  - Definition
  - Uses
  - Business-oriented Process Measurement
  - Kinds of Stars
  - Slowly Changing Dimensions
- History of the Dimensional Model
  - Foundation for Data Marts and OLAP
  - Popularized in the 1990's
- BI & Analytics Today
  - Multiple Service Families
  - Governance and Quality
  - Self-service
  - Agile Development
  - Big Data and New Sources
  - New Technology
- Death of the Dimensional Model?

### Module 2

#### Modern Data Architecture

- Data Architecture with Purpose
  - Yesterday's Data Architecture
  - Data Store Functions and Characteristics
- Data Architecture Without Purpose
  - A Box Labeled "Hadoop"
  - A Box Labeled "Data Lake"
- Modernizing the 'Back Room'
  - Non-relational Storage and Integration
  - Unlocking Big Data
- Enabling Discovery and Self-Service
  - Intake and Exploration
  - Archive or Deploy
  - Dimensional View of Consumable Assets
  - Directory of Resources
- Changes to the 'Front Room'
  - Data Marts and NoSQL
  - Regardless of Technology, It's a Data Mart
  - Data Warehouse and NoSQL
  - Regardless of Technology, It's a Data Warehouse
- Virtualization
  - Virtualization Concepts
  - Business View
  - Connecting to Non-Relational Sources
  - Extending the Data Mart
  - Prototyping
  - Virtualizing Data Stores
  - Virtual Data Marts
  - Virtual Data Warehouse

### Module 3

#### Big Data & Dimensional Design

- Tapping into Big Data
  - Beyond Production Data Sets
- Data Warehouse Augmentation Techniques
  - New Facts
  - Behavioral Dimensions
  - Attribute-value Pairs
- Data Warehouse Extension Techniques
  - Application Extends Data Mart
  - Virtualization Extends Data Mart
- Analytics-Friendly Design
  - Granular Data
  - Variety of Attributes
  - Weak Identifiers
  - Dimension History
  - Missing Data

### Module 4

#### Rethinking Best Practices

- Traditional Enterprise Scope
  - Broad Scope
  - Ensuring Fit
  - Conformed Dimensions
  - Time-to-Value
- Driving Scope with Business Priorities
  - Stand-alone Data Marts
  - Managing Risk
- Traditional Design Practices
  - Design Future-proof Models
  - Set Grain at Lowest Level Possible
  - Include all Applicable Dimension Tables
  - Include as Many Dimension Attributes as Possible
- Refocusing on Business Value
  - Reconsidering Design Practices
  - Impact of Future-Proof Models
  - Targeted Design Practices
- Managing Risk
  - Avoiding Pitfalls
  - The Debt Matrix
  - Making Balanced Choices

### Module 5

#### Refactoring Dimensional Solutions

- Refactoring Overview
  - Evaluating Impacts
  - Classifying Impacts
- Low Impact Changes
  - Adding a Fact
  - Adding a Dimension Attribute
  - Adding a Dimension Table
  - Adding Current Values

## Dimensional Modeling: What's New in the Big Data Era?

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- High Impact Changes
  - Adding Historic Values
  - Changing Grain
- Very High Impact Changes
  - Conforming Dimensions

### Module 6

#### Streamlining Dimensional Requirements

- Traditional BI Requirements
  - Linear Process
  - Data Model Focus
  - Division of Labor
- Modern Requirements
  - Rethinking What is Needed
  - Iterative Process
  - Collaborative Development
  - Practical Products
  - Actionable Requirements
- Requirements Process
  - Overview
  - Preparation
  - Business Needs Discovery
  - Interviewing Business SME's
  - Source Discovery
  - Recording Requirements
  - Business Review
  - Design Review
- Using the Requirements
  - Implementation-ready
  - Technology Agnostic Requirements

### Module 7

#### Templates for Actionable Requirements

- Templates
- Business Information Needs
  - Subject Area Template
  - BDM Diagram
  - Hierarchy Diagram
  - Metric Template
  - Conformance Matrix
- Top Level Design
  - Star Template
  - Dimension Template
  - Conformance Bus
- Customizing the Templates

### Module 8

#### Summary and Conclusion

- Summary of Key Points
- Recommended Resources