

### Module 1

#### The Dimensional Model & Modern BI

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

### Module 2

#### Modern Data Architecture

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

- o Business View
- o Connecting to Non-Relational Sources
- o Extending the Data Mart
- o Prototyping
- o Virtualizing Data Stores
- o Virtual Data Marts
- o Virtual Data Warehouse

### **Module 3**

#### **Big Data & Dimensional Design**

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

### **Module 4**

#### **Rethinking Best Practices**

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

- o Making Balanced Choices

## **Module 5**

### **Refactoring Dimensional Solutions**

- Refactoring Overview
  - o Evaluating Impacts
  - o Classifying Impacts
- Low Impact Changes
  - o Adding a Fact
  - o Adding a Dimension Attribute
  - o Adding a Dimension Table
  - o Adding Current Values
- High Impact Changes
  - o Adding Historic Values
  - o Changing Grain
- Very High Impact Changes
  - o Conforming Dimensions

## **Module 6**

### **Streamlining Dimensional Requirements**

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

## **Module 7**

### **Templates for Actionable Requirements**

- Templates
- Business Information Needs

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

## **Module 8**

### **Summary and Conclusion**

- Summary of Key Points
- Recommended Resources