



Business School
UNIVERSITY OF COLORADO DENVER

Information Systems Program

Module 3

Relational Database Design and Enterprise Data Warehouse Development

Lesson 6: Data Warehouse Design Methodologies



Lesson Objectives

- Gain insights about issues involved with enterprise data warehouse development
- Compare and contrast methodologies for data warehouse design
- Understand the importance of grain on data warehouse flexibility and capacity

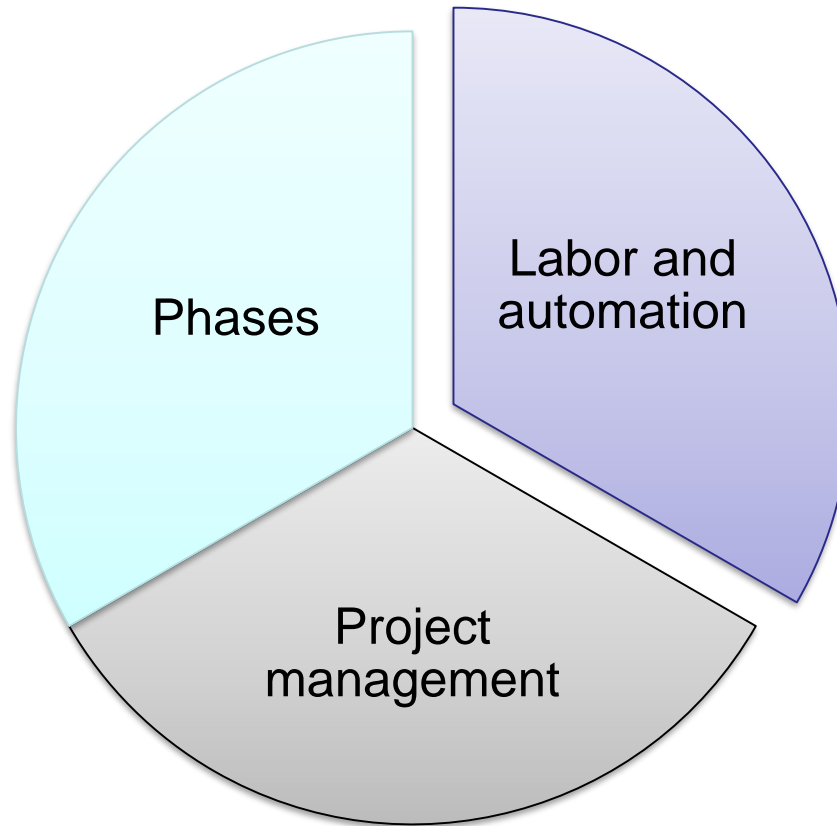


Design Methodology

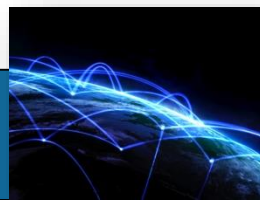
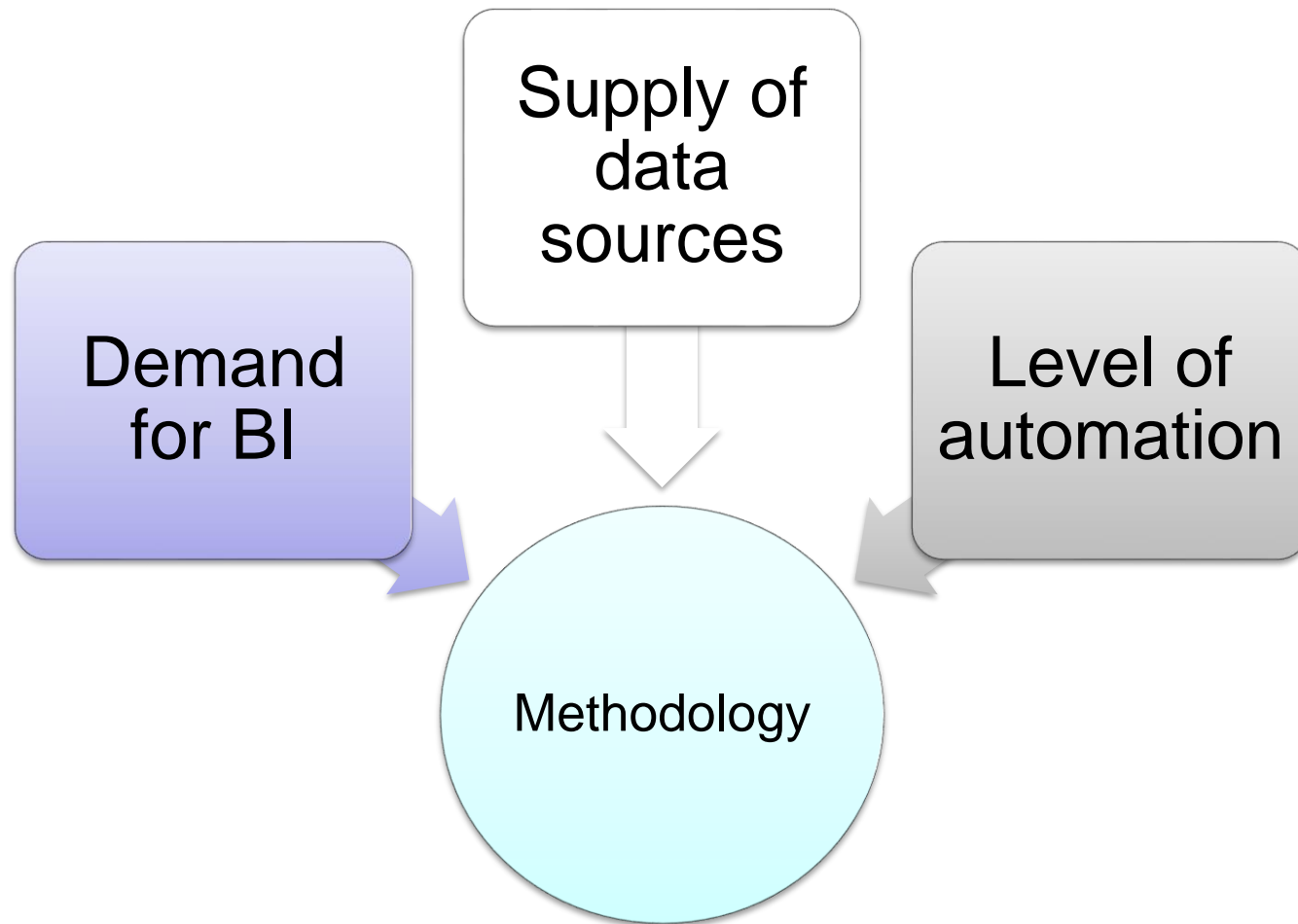
- Elements
 - Phases to create design artifacts and working system
 - Human and automated processes
 - Project management skills required
- Support the design of dimensional models, data warehouses, data marts, and data integration procedures



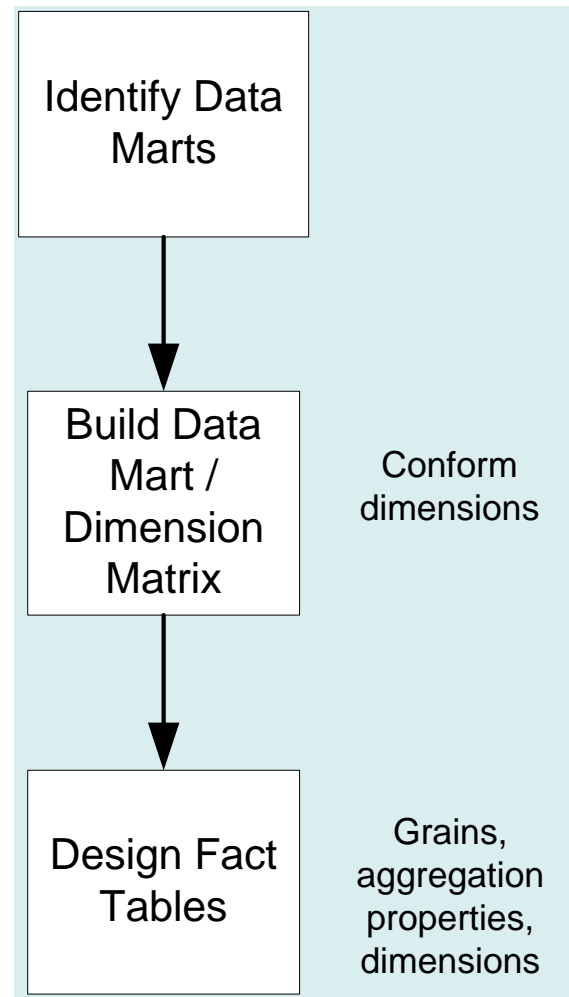
Design Methodology



Design Methodology Issues



Demand-Driven Methodology

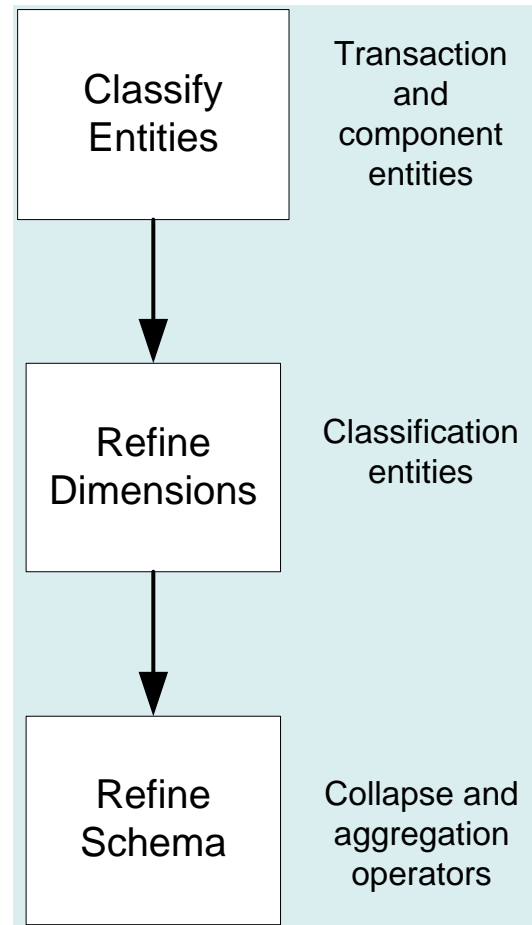


Demand-Driven Methodology Details

- Identify data marts
- Identify dimensions for data marts
 - Matrix relating data marts and dimensions
 - Standardize (conform) dimensions
- Design fact tables
 - Define grain
 - Determine details of dimensions
 - Define measures



Supply-Driven Methodology

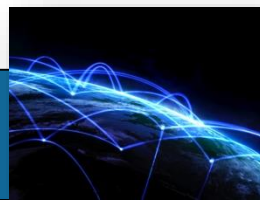
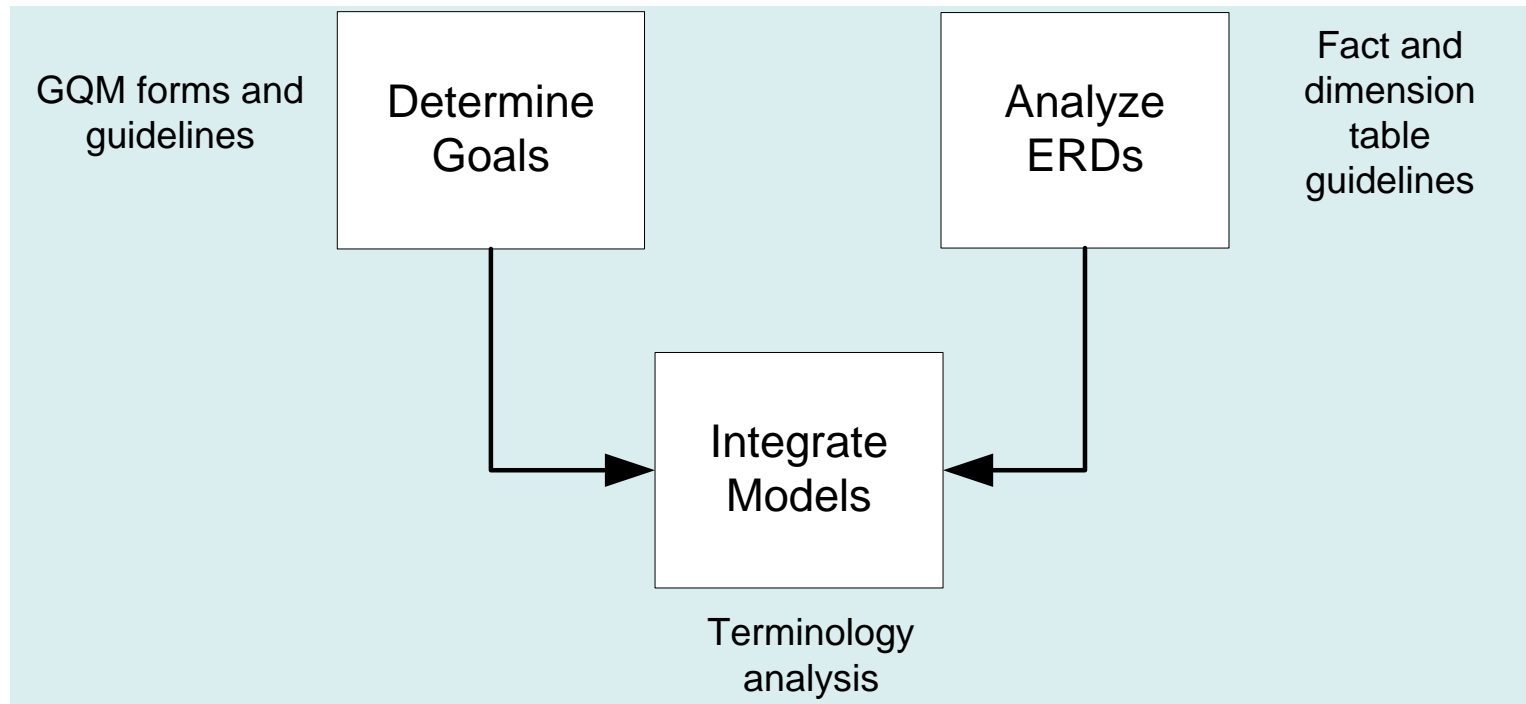


Supply-Driven Methodology Details

- Classify entity types
 - Transactional entity types: events
 - Component entity types: related to events in 1-M relationships
- Define dimensions
 - Classification entity types: related to component entity types in 1-M relationship
 - Dimension hierarchies for component/classification entity types
- Refine dimension model
 - Collapse
 - Aggregate



Hybrid Methodology



Hybrid Methodology Details

- Collect user requirements:
 - Use Goal/Question/Metric approach
 - Develop dimensions and measures (demand driven)
- Analyze existing ER diagrams
 - Identify entity types representing facts and dimensions
 - Create star schemas (supply driven)
- Integrate star schemas
 - Convert schemas to common terminology
 - Match demand and supply models



Summary

- Methodology matters
- Balance demand, supply, and automation
- Grain determination importance

