Developing a Unified Dimensional Model (UDM) with Analysis Services

Peter Myers

Mentor – Solid Quality Mentors

North Texas SQL Server Users Group – 21 May, 2009

AGENDA

- Analysis Service's OLAP component allows organizations to implement a Unified Dimensional Model (UDM) that is designed for rapid ad hoc information retrieval of their data. The UDM, as a single version of the truth, can be enriched to encapsulate business rules and calculations, and advanced Business Intelligence features including KPIs and actions.
  For organizations that have a Standard or Enterprise SQL Server license, Analysis Services is a possible zero-cost opportunity for your organization today. In the session learn how to exploit the capabilities and features, and the basics of best practice design. Be prepared for numerous compelling demonstrations and to leave the session energized by the potential!
  This session is targeted at IT professionals with an interest in data analysis, and equally for non-IT professionals interested to understand and evaluate Microsoft's BI strategy and platforms. Apart from a general understanding of relational database technologies, there is no requirement to have any background or experience with OLAP technology.

WHO WE ARE

- *Industry experts:*
  Growing, elite group of over 100 of the world's best technical experts who, as reflected by the high concentration of Microsoft MVP's and RD's in our ranks, achieve excellence in their industry by maintaining the highest credentials.
- *Published authors:*
  Best technical reference books, Microsoft reference materials,   industry white papers, technical magazine articles, and webcasts.
- *Top technical speakers:*
  PASS Community Summit, Microsoft TechEd, The Microsoft BI Conference, SQL Server DevConnections, countless user groups, international conferences and events.
- **For more information visit *www.solidq.com***

WHAT WE DO

Provide advanced, world-class expertise across the entire Microsoft relational data and development platforms and complimenting technologies.
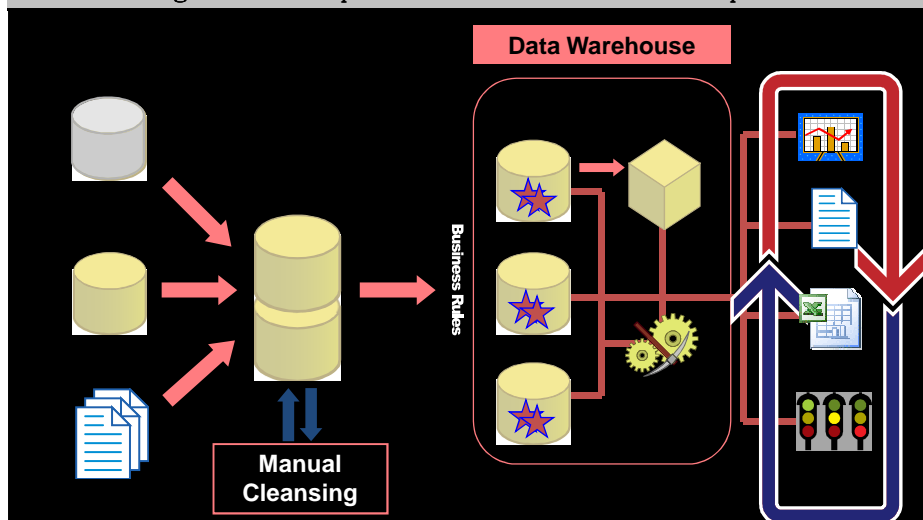
PRACTICE AREAS	SERVICES
Relational Database Management	Advanced, Public Training
Business Intelligence	Customized, Private Training
Development Methodologies	Solution Delivery & Tuning
SharePoint Collaboration	Enhanced, Mentoring Services

For more information visit *www.solidq.com*

- Introducing OLAP and the UDM
- Developing the UDM
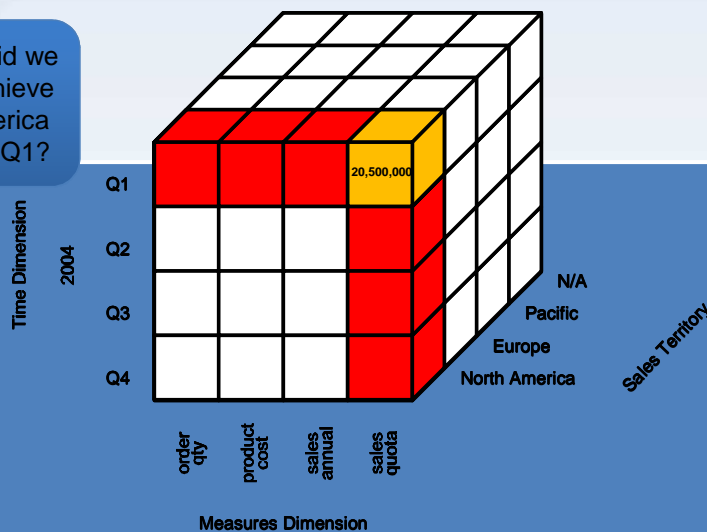- Enriching the Design of the UDM
- Querying the UDM

9: Delivering BI enables a process of continuous business improvement

- Contains queryable structures called cubes
- Cubes:
  - Are optimized for rapid ad hoc information retrieval
  - Include a calculation engine for fast, flexible transformation of base data
  - Support the discovery of business trends and statistics not directly visible in data warehouse queries
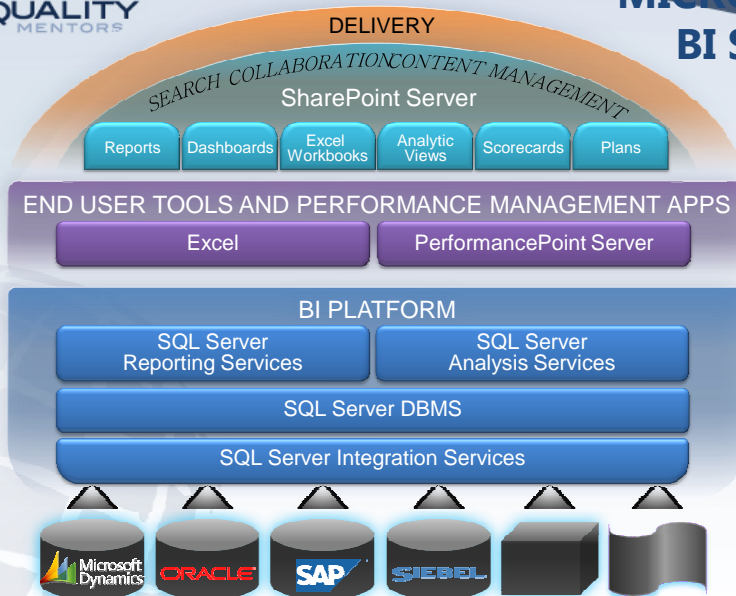

BUSINESS SCENARIOS

- Sales analysis
- Budgeting and forecast collection and reporting
- Financial reporting
- Web statistics analysis
- Survey results analysis
- Or, any scenario involving aggregated data that needs to be queried fast and flexibly at different levels of summarization

---

MICROSOFT BI STACK

- OLAP component
  - Aggregates and organizes data from business data sources
  - Performs calculations difficult to perform using relational queries
  - Supports advanced Business Intelligence, including Key Performance Indicators
  - Provides a business semantic model referred to as the Unified Dimensional Model (UDM)
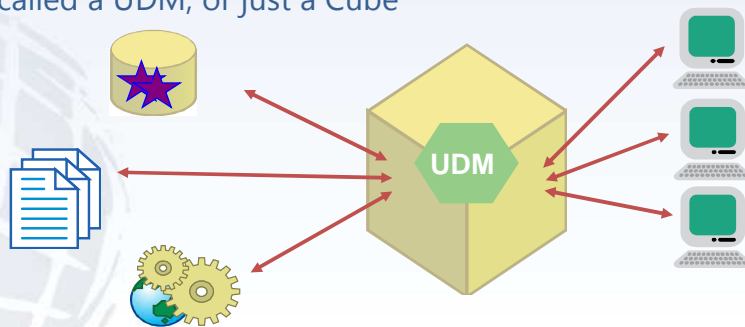- Data mining component
  - Discovers patterns in both relational and OLAP data
  - Enhances the OLAP component with discovered results

- Provides a bridge between the end user and the data sources
- Consolidates business rules into a single model
- Challenges traditional models
- Commonly called a UDM, or just a Cube

UDM

DEMONSTRATION
Developing the UDM

ENRICHING THE UDM

- The UDM can be enriched with:
  - Calculations
  - Key Performance Indicators (KPIs)
  - Cube actions
  - Partitions
  - Translations

DEMONSTRATION
Enriching the Design of the UDM

QUERYING THE UDM

- Microsoft provide three possibilities:
  - Reporting Services
  - Excel 2007
    - PivotTables and Free-Form
    - Publication to Excel Services
  - PerformancePoint Server
    - Analytic Chart and Grid reports

DEMONSTRATION
Querying the UDM

RESOURCES

- www.microsoft.com/sqlserver/2008/en/us/analysis-services.aspx
  - Links to technical resources, case studies, news, and reviews
- "Microsoft SQL Server 2008 Analysis Services Step by Step", by Scott Cameron (Microsoft Press)
- "Microsoft SQL Server 2008 MDX Step by Step", by Bryan Smith and C Ryan Clay (Microsoft Press)