



QUEST FOR KNOWLEDGE

DIMENSIONAL MODELING IN DEPTH

DATE

30 October - 2 November 2007

LOCATION

Amsterdam, The Netherlands

INFORMATION AND REGISTRATION

www.Q4K.com

A KIMBALL UNIVERSITY course

Taught by RALPH KIMBALL and MARGY ROSS

Excellence in dimensional modeling remains the keystone of a well designed data warehouse.

This course gives you the opportunity to learn directly from the industry's dimensional modeling leaders, **Ralph Kimball** and **Margy Ross**.

A must for every Data Warehouse and Business Intelligence specialists!

Register Now – don't miss this opportunity to learn from the authors of *The Data Warehouse Toolkit* and *The Data Warehouse Lifecycle Toolkit*.

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Kimball University

Kimball University (KU), operated by the Kimball Group, is the definitive source for dimensional data warehouse education. The KU goal is to provide the highest quality and most practical education consistent with KU instructors' books and extensive experience in the dimensional approach. All course content is vendor neutral. You'll learn from the best in the business. Quest For Knowledge has partnered with KU for several years to bring the highly rated KU classes to Europe.

RALPH KIMBALL



Ralph Kimball, founder of the Kimball Group, is known worldwide as an innovator, writer, educator, speaker and consultant in the field of data warehousing. He has remained steadfast in his long-term conviction that data warehouses must be designed to be understandable and fast. His books on dimensional design techniques have become the all time best sellers in data warehousing. His books include *The Data Warehouse Toolkit* (Wiley, 1996), *The Data Warehouse Lifecycle Toolkit* (Wiley, 1998), *The Data Warehouse Toolkit* (Wiley, 2000), *The Data Warehouse Toolkit, 2nd Edition* (Wiley, 2002), *The Data Warehouse ETL Toolkit* (Wiley, 2004) and *The Microsoft Data Warehouse Toolkit* (Wiley, 2006). To date Ralph has written more than 100 articles and columns for Intelligent Enterprise and its predecessors, winning the Readers' Choice Award five years in a row. After receiving a Ph.D. in 1972 from Stanford in electrical engineering (specializing in man-machine systems), Ralph joined the Xerox Palo Alto Research Center (PARC).

At PARC Ralph co-invented the Xerox Star Workstation, the first commercial product to use mice, icons and windows.

Ralph then became vice president of applications at Metaphor Computer Systems, pioneering decision support software and services provider. As a hands-on manager, he developed the Capsule Facility in 1982. The Capsule was a graphical programming technique which connected icons together in a logical flow, allowing a very visual style of programming for non-programmers. The Capsule was used to build reporting and analysis applications at Metaphor. Ralph founded Red Brick Systems in 1986, serving as CEO until 1992. Red Brick Systems, now owned by IBM, was known for its lightning fast relational database optimized for data warehousing. Ralph Kimball Associates incorporated in 1992 to provide data warehouse consulting and education.

MARGY ROSS



Margy Ross is President of the Kimball Group. She has focused exclusively on decision support and data warehousing for more than twenty years, specializing in program/project strategy, business requirements analysis, and dimensional modeling. Since helping over 100 large organizations with their data warehouses, she remains convinced that business acceptance is the true measure of data warehouse success. In addition to her consulting activities, Margy teaches the core Kimball University public classes and on-sites, both domestically and internationally. She co-authored *The Data Warehouse Toolkit, 2nd Edition* and

The Data Warehouse Lifecycle Toolkit and regularly writes the Data Warehouse Designer column for Intelligent Enterprise.

Before launching the Kimball Group, Margy co-founded DecisionWorks Consulting, Inc. in 1994 with Bob Becker and Nancy Rinn. She had previously worked at Metaphor for ten years in a variety of consulting and management positions, including responsibility for Metaphor's Customer Database Marketing business unit. Margy began her career with Arthur Andersen (now Accenture) Consulting. She graduated with a BS in Industrial Engineering from Northwestern University.

Course Outline

Dimensional Modeling Fundamentals

- Publishing responsibilities of DW/BI professionals
- Role of dimensional modeling in Kimball versus Corporate Information Factory architectures
- Fact and dimension table characteristics
- Surrogate key recommendations
- Fact table granularity
- Dimensional modeling fables and myths

Retail Sales Case Study as Class Design

- 4-step design process
- Denormalized dimension table hierarchies
- Degenerate dimensions
- Dimension role-playing
- Date and time-of-day dimension considerations
- Centipede fact tables with too many dimensions
- Gracefully extending an existing dimensional model
- Star versus snowflake schemas
- Factless fact tables

Order Management Design Workshop as Small Group Exercise

- Complications with operational header/line data
- Allocated facts
- Abstract, generic dimensions
- Freeform text comments
- Junk dimensions for miscellaneous transaction indicators
- Multiple currencies

Inventory Case Study as Class Design

- Value chain implications
- Semi-additive facts
- Three fundamental types of fact tables (transaction, periodic snapshot and accumulating snapshot)
- Conformed dimensions
- Enterprise Data Warehouse Bus Architecture and matrix to integrate dimensional models
- Drilling across fact tables
- Individual exercise: Translate requirements into bus matrix
- Consolidated cross-process fact tables

Billing Design Review as Individual Exercise

- Common design flaws
- Checklist for conducting design reviews

Slowly Changing Dimensions

- Basic Type 1, 2 and 3
- Advanced hybrid techniques for dealing with a series of predictable and unpredictable changes
- Mini-dimensions for rapidly changing large dimensions

Credit Card Design Workshop as Small Group Exercise

- Complementary transaction and periodic snapshot schemas
- Design considerations for one dimension versus two dimensions
- Fact table normalization

Insurance Case Study as Class Design

- Review of earlier design patterns and techniques
- Development of bus matrix from extended case study
- Communicating dimensional models to users
- Further recommendations regarding modeling process activities
- Detailed implementation bus matrix

FINANCIAL APPLICATIONS

Automobile Options Case Study as Class Design

- Trading off columns versus rows
- Impact on user interface design and application scalability

Profit Equation

- Starting with revenue, then bringing costs to same grain
- What to do when your business refuses to allocate
- Tracking allocation metadata
- Profit margin point analysis
- Profit margin value banding

General Ledger

- Cleanest schema in your data warehouse
- Non-conforming dimensions from the general ledger
- Tracking instantaneous balances across all time
- Why not to store year-to-date, what to do instead
- Drilling down in the general ledger all the way to a document

Budgeting Value Chain

- Budgets, commitments and expenditures
- Ragged hierarchies for financial reporting
- Bridge tables for ragged hierarchies
- Shared ownership in financial rollups
- Time varying ragged hierarchies
- Techniques for modifying ragged hierarchies
- Rolling up the value chain through a ragged hierarchy

Specific Financial Application Challenges

- Tracking the "age of the book"
- Calculating the "policy loss triangle" in insurance

Retail Bank Account Tracking as Small Group Exercise

- Serving the need for householding all possible account types and full account detail with 100's of facts
- Many-to-many account to customer map
- General many valued dimensions
- Very rapidly changing account demographics and status
- Correctly weighted and "impact" reports by individual customer
- Tagging an account as "about to go bankrupt"
- Super-types and sub-types in financial applications

Compliance Enabled Data Warehouses

- Eliminating Type 1 and Type 3 updates
- Accessing all prior versions of a database at points in time
- Protecting the custody of your data
- Showing why and when changes to data occurred

Dimensional Designs in the ETL Back Room

- Tracking data quality with error event fact table (brief overview)
- Column, structure, and business rule tests for data quality
- Reporting data quality with audit dimension

CUSTOMER BEHAVIOR APPLICATIONS

Customer Relationship Management Payoffs Class Discussion

- What do our end users expect from a CRM system?
- How do CRM results impact the bottom line?
- What data sources are needed to support CRM?
- What data quality and integration problems are common?
- Where are real-time CRM solutions required? What is real-time?

Capturing Complex Customer Behavior

- Building study groups from existing reports
- Attaching study group tables to all customer facing applications
- Combining study groups with union, intersection, set difference
- Sequential time dependent study groups
- Applying study groups to marketing panel studies
- Applying study groups to medical outcomes analysis

Building Visual Basic (or similar) Custom User Interfaces

- Car option selection, value band definition, study group creation

Typical Customer Dimension Modeling Challenges

- Hundreds or even thousands of demographic attributes
- Sparse but wide demographics coverage
- Implicit time spans defined by all types of transactions
- Finding detailed customer status at random times in the past
- Tricky time span queries made simple
- Multiple and growing lists of names in complex customer profile
- Customer satisfaction dimensions: causal dimensions
- When is something both a dimension and a fact?
- Relationship between a prospect and a customer
- Maintaining customer identity after aggressive deduplication

Real Time Customer Tracking (brief overview)

- Hot partition
- How to handle unresolved customer identities in real time

Modeling Sequential Behavior

- Step dimension for describing sequential behavior
- RFID and web page challenges (brief discussion)
- Link exposure data sets: 10 terabytes per day
- Modeling and querying product purchase sequences

Text Facts to Describe Cluster Evolution

- Building text facts with cluster identification data mining tool

Final Customer Topics

- Modeling very complex events involving many parties such as automobile accidents and complex surgical procedures
- Structured questionnaire

Course description

Excellence in dimensional modeling remains the keystone of a well designed data warehouse. This course gives you the opportunity to learn directly from the industry's dimensional modeling leaders, Ralph Kimball and Margy Ross.

What you will learn

You will learn practical dimensional modeling techniques covering basic to advanced issues. Following the tradition of *The Data Warehouse Toolkit*, all the techniques in this course are motivated by specific industry scenarios. The goal is for students to gain an in-depth understanding of dimensional modeling so they can confidently apply the concepts in their workplace following the class.

Prerequisites

Students should be

- Able to name and describe in a few words the main operational systems of his or her organization.
- Able to name and describe in a few words the main business concerns of the end users in his or her organization.
- Somewhat familiar with basic data modeling concepts such as referential integrity.

However, the absence of these abilities and familiarity will not keep you from profiting from the course. There is no need for any kind of preparatory data warehousing course prior to this course.

Registration fee

The fee for the 4-day course "Dimensional Modeling in Depth" is €2.695 per person. This includes four days of instruction, buffet lunch and morning/afternoon snacks, course materials and a KU Certificate of Completion. Students also receive a copy of *The Data Warehouse Toolkit, 2nd Edition*.

We offer the following discounts. Only one discount may be used.

- 10% Early Bird Discount for students registering before the Early Bird cut off date (14 September 2007). Payment must be received before the cut off date to receive the discount.
- 10% discount for groups of three or more students from the same company registering at the same time. Groups of three or more students that register at a discounted rate must retain the minimum group size or the discount will be revoked.

Who should attend

This course is designed for data warehouse architects, data modelers, DBAs, application developers, and system designers. It is appropriate for anyone interested in an A to Z coverage of dimensional modeling.

Venue

Dimensional Modeling in Depth will take place in Amsterdam at the Dorint Hotel Amsterdam Airport, the largest conference hotel in the Amsterdam/Schiphol region. From the moment you arrive till your departure, the Dorint Hotel Amsterdam Airport will cosset you with outstanding hospitality and professionalism. Dorint Hotel Amsterdam Airport is located next to the Amsterdam Forest and within a 10 min drive of the major business districts, RAI, Amstelveen, Amsterdam and Schiphol Airport, with central Amsterdam (museum square, shopping area) only 15 min from the hotel on the shuttle service.

Please contact the hotel directly for pricing, availability and reservations.

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1117 CE SCHIPHOL
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30 October - 2 November 2007

DIMENSIONAL MODELING IN DEPTH

Quest For Knowledge

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Organized by

Quest For Knowledge

Architecting an IT environment that stands the test of time begins with a sharp vision on the durability of all of its components. Quest for Knowledge (Q4K) concentrates on education and training on software and concepts that have a bright future in one of these interrelated disciplines: Data Warehousing, Business Intelligence and Customer Relationship Management. The Q4K Data Warehouse and Business Intelligence curriculum provides in the most comprehensive education and training available in the Benelux. With in depth Data Warehouse courses and a series of product oriented training classes for leading Business Intelligence solutions, Q4K training provides you with the best knowledge transfer and a sound foundation to make your projects successful. Visit our website www.Q4K.com or request our training catalog for a complete overview.

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With the support of

Newcom Information Systems

Newcom Information Systems (Newcom) has a long experience providing consultancy in the fields of Business Intelligence and Data Warehousing. The activity range of Newcom's professionals goes from business consulting to implementation, as well as assessing Business Intelligence infrastructures. One of our standard services is the assessment of existing Business Intelligence and Data Warehouse environments. The experience has proven that investments in such environments are often not fully exploited because the information delivery is not in line with the business needs. Newcom is a tool-independent consulting company and guarantees the most successful strategy for your business. A perfect connection to your organisation is created at all time where scalable, flexible and extendable solutions prevail. And last but not least Newcom ensures proper knowledge transfer. This means that you will be fully in control of the delivered solutions. Visit the website at www.newcom.net for more information about the services and solutions of Newcom Information Systems.

REGISTRATION FORM Register by fax : +31 76 572 21 96**Course Details**

Dimensional Modeling in Depth ■ 30 October - 2 November 2007 ■ Amsterdam, The Netherlands ■ 2.695 euro (excl. VAT)

Company Details

Company Name: _____

E-mail: _____

Contact Name: _____

Phone: _____

Address: _____

Fax: _____

Postal Code: _____

Website: _____

City: _____

Invoice Address: _____

Country: _____

Postal Address: _____

VAT Number: _____

Purchase Order no.: _____

Student Details

First Name: _____

Language: NL FR EN

Last Name: _____

Gender: Male Female

Job Title: _____

E-Mail: _____

Authorization

Name: _____

Job Title: _____

Date: _____

Signature: _____

Registration Information

Confirmation and Invoicing: upon receipt of your registration our customer service department will send you a customer information pack including details of payment and hotel information. Full payment is due prior to the course start date.

Cancellations and Substitutions: Cancellations must be received in writing 20 working days prior to the course start date and are subject to a 20% administration fee. Otherwise the full registration fee remains due. As an alternative to cancellation you may transfer your place for the course to a colleague without extra costs, but Quest For Knowledge has to be informed about this transfer in advance. Quest For Knowledge reserves the right to cancel any course at anytime without any liability whatsoever, safe for the refund of the registration fee.