



QUEST FOR KNOWLEDGE

DIMENSIONAL MODELING IN DEPTH

DATE 12 - 15 November 2013

LOCATION Frankfurt

INSTRUCTORS Margy Ross & Ralph Kimball

INFORMATION AND REGISTRATION www.Q4K.com

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With the support of



Kimball University

Kimball University (KU), operated by the Kimball group, is the definitive source for dimensional data warehouse education. KU provides the highest quality and most practical education consistent with KU instructors' books and extensive experience in the dimensional approach. You'll learn from the best in the business. The KU instructors literally wrote the books; why settle for anything less than the original inventors and authors of these concepts! All class content is vendor neutral, with the exception of our Microsoft-centric courses.

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. She co-authored *The Data Warehouse Toolkit (2nd Edition)*, *The Data Warehouse Lifecycle Toolkit (2nd Edition)* and *The Kimball Group Reader* 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.

RALPH KIMBALL



Ralph Kimball 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 (2nd Edition)*, *The Data Warehouse Lifecycle Toolkit (2nd Edition)*, *The Data Warehouse ETL Toolkit*, *The Microsoft Data Warehouse Toolkit (2nd Edition)* and *The Kimball Group Reader*. 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.

Course Outline

Dimensional Modeling Fundamentals

- Publishing responsibilities of DW/BI professionals
- Role of dimensional modeling in the Kimball, Corporate Information Factory (CIF) and hybrid architectures
- Fact and dimension table characteristics
- Surrogate key for dimensions
- Fact table granularity
- Degenerate dimensions
- Benefits of dimensional modeling
- 4-step design process

Retail Sales Case Study

- Transaction fact tables
- Denormalized dimension table hierarchies
- Dealing with nulls
- Dimension role-playing
- Date and time-of-day dimension considerations
- Centipede fact tables with too many dimensions
- Star versus snowflake schemas
- Factless fact tables

Order Management Design Workshop

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

Inventory Case Study

- Implications of business processes on data architecture
- Semi-additive facts
- Three types of fact tables - transaction, periodic snapshot and accumulating snapshot
- Conformed dimensions – identical and shrunken roll-ups
- Enterprise Data Warehouse Bus Architecture and matrix for master data and integration
- Drilling across fact tables
- Consolidated cross-process fact tables
- Individual exercise: Translate requirements into DW bus matrix

Billing Design Review Exercise

- Common design flaws and mistakes to avoid
- Checklist for conducting design reviews

Slowly Changing Dimensions

- Basic Type 1, 2 and 3 techniques
- Advanced techniques to deliver current and point-in-time attribute values

- Mini-dimensions for rapidly changing large dimensions
- Multiple mini-dimensions and outriggers

Credit Card Design Workshop

- Complementary transaction and periodic snapshot schemas
- Design considerations for one dimension versus two dimensions
- Bridge tables for many-valued dimension attributes
- Fact table normalization

Insurance Case Study

- Review of design patterns and techniques
- Development of bus matrix from extended case study
- Complex, unpredictable accumulating snapshots
- Detailed implementation bus matrix

Dimensional Modeling Process

- Process flow, tasks and deliverables

Financial Applications – Profit Equation

- Allocating costs to the same grain as revenue
- Profit margin point analysis and value banding

Financial Applications – General Ledger

- Tracking instantaneous balances
- Multiple time zones
- Drilling down in the general ledger to a document

Financial Applications – Budgeting Value Chain

- Budgets, commitments and expenditures
- Bridge tables for variable-depth ragged hierarchies
- Shared ownership and time-varying ragged hierarchies
- Pathstring alternative for ragged hierarchies
- Tracking the “age of the book”
- Calculating the “policy loss triangle”

Retail Bank Account Tracking Workshop

- Multiple account types with hundreds of potential attributes and facts
- Many-to-many account to customer map and weighted versus “impact” reports
- Tagging accounts as “about to go bankrupt”
- Supertypes and subtypes

Automobile Options Exercise

- Column versus row trade-offs based on usability and scalability

Compliance-Enabled Data Warehouses

- Eliminating Type 1 and Type 3 updates

ETL Back Room Dimensional Designs

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

Customer Relationship Management Payoffs Discussion

- Business users’ expectations and bottom line impact?
- Data sources needed? Common quality/integration problems?

Complex Customer Behavior Case Studies

- Building study groups
- Sequential time dependent study groups
- Applying study groups to marketing panels and medical outcomes

Building Custom User Interfaces

- Examples: car option selection, value band definition, study group creation

Customer Dimension Modeling Challenges

- Sparse but wide demographics attributes
- Finding detailed customer profile at random times in the past
- Tricky time span queries
- Simultaneous facts and dimensions
- Relationship between prospects and customers

Real Time Customer Tracking

- Hot partitions
- Handling unresolved customer identities in real time

Modeling Sequential Behavior

- Step dimension for describing sequential behavior
- RFID and web page challenges
- Modeling product purchase sequences

Final Customer-Centric Topics

- “Text” facts for customer cluster identification
- Structured questionnaires

Why attend

Excellence in dimensional modeling remains the keystone of a well-designed data warehouse presentation area, regardless of whether you've adopted a Kimball, Corporate Information Factory (CIF), or hybrid architecture. This course gives you the opportunity to learn directly from the industry's dimensional modeling thought leaders.

The word "Kimball" is synonymous with dimensional modeling. Ralph has established an extensive portfolio of dimensional techniques and vocabulary, including conformed dimensions, slowly changing dimensions, junk dimensions, mini-dimensions, bridge tables, periodic and accumulating snapshot fact tables, and the list goes on.

In this course, you will learn practical dimensional modeling techniques covering basic to advanced issues and patterns. Concepts are taught through a combination of lectures, class exercises, small group workshops, and individual problem solving illustrated by real-world industry scenarios. The goal is for students to gain an in-depth understanding of dimensional modeling so they can confidently apply the techniques in their workplace following the class.

Who should attend

This course is designed for data warehouse architects, data modelers, database administrators, business analysts, and ETL or BI application developers and system designers. It's appropriate for anyone interested in an A to Z coverage of dimensional modeling.

Prerequisites

You should be:

- Able to name and describe in a few words the main operational systems of your organization.
- Able to name and describe in a few words the main business concerns of the end users in your 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 this 4-day course is EUR 2.695,00 per person. This includes four days of instruction, lunch and morning/afternoon snacks, course materials and a KU Certificate of Completion. Students receive a copy of *The Data Warehouse Toolkit*.

We offer the following discounts. Discounts cannot be combined.

- 10% Early Bird discount for students registering before **23 September 2013**. Payment must be received before the cut off date to receive the discount.
- 10% discount for groups of 3 or more students from the same company registering at the same time.
- 20% discount for groups of 5 or more students from the same company registering at the same time. **Register 5 students, only pay for 4.**

Note: Groups that register at a discounted rate must retain the minimum group size or the discount will be revoked.

Venue

The Steigenberger Hotel Metropolitan is located behind its historical sandstone facade in the German financial centre – also lovingly called "Mainhattan". Its vicinity to the banking district, the trade fair grounds and all the places of interest make this hotel an ideal city domicile. The hotel is located just a few steps away from the main.

Steigenberger Hotel Metropolitan
Poststraße 6
60329 Frankfurt/Main
Germany
T: +49 69 506070-0
F: +49 69 506070-555
E: metropolitan@steigenberger.de
W: www.metropolitan.steigenberger.de

12 - 15 november 2013

DIMENSIONAL MODELING IN DEPTH

FAX REGISTRATION FORM **+31 76 572 21 96**

Course Details

Dimensional Modeling in Depth ■ 12 - 15 November 2013 ■ Frankfurt ■ EUR 2.695 (ex. vat)

Company Details

Company Name:	E-mail:
Contact Name:	Telephone:
Address:	Fax:
Postal Code:	Website:
City:	Invoice Address:
Country:	
Postal Address:	VAT Number:
	Purchase Order no.:

Student Details

First Name:	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female
Last Name:	E-Mail:
Job Title:	Telephone:

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.



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DIMENSIONAL MODELING IN DEPTH

Quest For Knowledge

The Netherlands

Hoge Schouw 1H | 4817 BZ Breda
T: +31 76 572 21 99 | F: + 31 76 572 21 96

Belgium

Uitbreidingstraat 84-3 | 2600 Antwerp
T: +32 3 877 93 39 | F: + 32 3 877 93 41

Online

www.Q4K.com | info@Q4K.com

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.

Kimball University

Kimball University (KU) is the definitive source for dimensional data warehouse education. KU provides the highest quality and most practical education consistent with KU instructors' books and extensive experience in the dimensional approach. You'll learn from the best in the business. Kimball University offers public classes in venues around the US and internationally. In addition, KU teaches classes on-site at client locations. All class content is vendor neutral.

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Adastra: Global Information Management Experts

Adastra provides world-class Business Intelligence, Data Integration, Data Quality, Data Warehousing, Information Governance and Master Data Management services and solutions to companies around the globe. Leveraging over a decade of experience across industries and technologies, Adastra bridges the gap between pressing business needs and technology consulting to protect existing investments and extend and unlock their business value. Our key to success is realized business solutions in workable technical design with an experienced team. We deliver a technological superior solution, scalable to growth with changing

needs, proven methodologies, and effective project management. Our solutions maximize and enhance existing technology investments.

Microsoft

Microsoft provides a complete solution suite of technologies to help enable an interoperable, end-to-end infrastructure. This helps IT departments to maximize return on investment and enable mission-critical environments at a low total cost of ownership (TCO). With Windows Server 2012, Microsoft has transformed the definition of server operating systems by providing enhanced Hyper-V virtualization, storage spaces, runtime memory configuration, and more. Microsoft's optimal database platform, SQL Server 2012, enables mission-critical environments, offering availability and performance at a low TCO. Customers can benefit from other enterprise class features of SQL Server 2012, including in-memory column store for DataWarehousing and in-memory OLTP. Microsoft has always focused on delivering best-in-class enterprise solutions—from consulting services to patching to integration within the system, and even the use of different tools like SQL Server Data Tools, SQL Server Integration Services, or other Business Intelligence (BI) tools. Regardless of the solution, Microsoft has delivered it with full authority and almost always offered it as a built-in feature, at no additional cost.

ORAYLIS

ORAYLIS GmbH is the leading service provider for Business Intelligence (BI) solutions in Germany. Founded in 1999 ORAYLIS always met customer expectations by delivering successful projects in time and budget across selected vertical segments. ORAYLIS' primary intention towards customers is to combine technology skills, domain expertise, process focus and a commitment to long-term client relationships in order to generate sustainable business value. ORAYLIS is Microsoft's first partner in Germany with gold competence in "Business Intelligence" and "Data Platform". ORAYLIS takes ownership and delivers on commitments in order to create innovative BI solutions for successful projects. Passionate employees always try to excel by challenging the status quo. Prerequisite for doing this is that ORAYLIS drives openness, trustful partnering and ethical conduct.