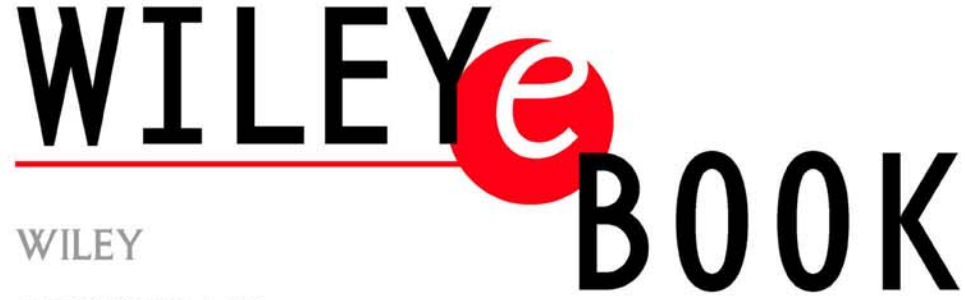


Data Modeler's Workbench

Advance Praise for *Data Modeler's Workbench*

"This book is chock-full of useful techniques and tips for improving data models and designs. And it's easy and an entertaining read as well—a terrific combination!"

Wayne Eckerson
Director of Education and Research,
The Data Warehousing Institute

"Any data modeler should own a copy of Steve Hoberman's book on data modeling tools and techniques. Steve does an outstanding job of walking the reader through real-world data modeling situations and shows how to successfully apply the tools and techniques contained in this book."

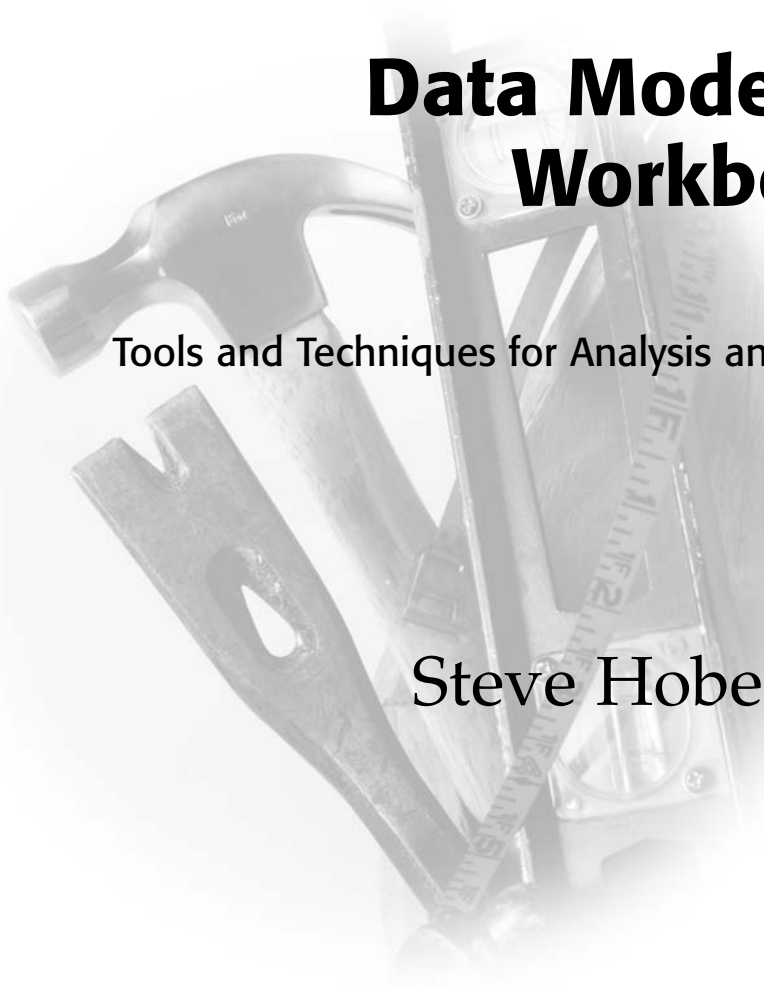
David Marco
President, Enterprise Warehousing Solutions, Inc.

"Steve Hoberman has written a truly valuable book that is sure to advance the discipline of data modeling. His concepts, definitions, and classification schema help advance data modeling as a learnable and repeatable process. Many aspects of this book added to my knowledge of data modeling—and I'm a modeling practitioner with nearly twenty years of experience. I believe the single greatest impact this book will make is in its attention to data modeling as a human process as well as a technical one."

David Wells
Founder and Principal Consultant, Infocentric

Data Modeler's Workbench

Tools and Techniques for Analysis and Design



Steve Hoberman

Wiley Computer Publishing

John Wiley & Sons, Inc.

NEW YORK • CHICHESTER • WEINHEIM • BRISBANE • SINGAPORE • TORONTO

Publisher: Robert Ipsen
Editor: Robert Elliott
Developmental Editor: Emilie Herman
Managing Editor: John Atkins
Associate New Media Editor: Brian Snapp
Text Design & Composition: ATLIS Graphics & Design

Published by John Wiley & Sons, Inc., New York

This title is also available in print as ISBN 0-471-11175-9. Some content that appears in the print version of this book may not be available in this electronic edition.

For more information about Wiley products, visit our web site at www.Wiley.com

To Jenn

CONTENTS

It would be interesting to draw a map of all the challenges faced by professional modelers in their day-to-day work and then to assess how well each one is addressed by the literature. It would be a very uneven picture.

Normalization would probably win the prize for the most-addressed topic. Indeed, an outsider could easily conclude that data modeling was primarily about the resolution of complex normalization problems and that the prime tools of the data modeler were relational algebra and calculus.

Languages and diagramming conventions would be more than adequately covered. There has been a steady stream of alternatives proposed over the years, and a great deal of debate—sometimes passionate debate—as to their relative suitability.

Thanks to more recent publications, largely by practitioners, we would see some useful contributions in the previously barren areas of data model patterns and business rules.

These are important topics, but they address only a fraction of what data modelers actually do. The choice of conventions is usually a one-time decision, often made by someone else. If normalization is done at all, it is usually as a final check on what has been done intuitively. Thirty years of research since the original articulation of the first three normal forms has made little difference to the models that are produced in practice.

What is missing in this lopsided map is material on the *process* of data modeling: the practicalities of project planning, communicating with end users, verifying rules and assumptions, presenting models to diverse audiences, even convincing stakeholders that data modeling needs to be done at all. This is the messy, inexact stuff that consumes the time of real data modelers—and very often determines whether a project will succeed or fail.

The glib response is that we learn these things from experience, rather than from books. This should not be an acceptable answer. True, many of these topics may be unattractive to researchers: they are not easily compartmentalized, they require a detailed knowledge of practice and organizational settings, and there is seldom a single solution. But there is a real need to codify experience if we are to avoid reinventing the wheel or paying for data modelers' education with failed projects.

Steve Hoberman has tackled a large uncharted area with this book. He identifies a range of challenges facing data modelers, and this is an achievement in its own right. Many of them are common problems that we all face, but have not always stopped to think about or discuss.

He then offers his own solutions: tools, ideas, ways of communicating. They have the ring of truth about them; one senses that they have been born of necessity and evolved through repeated use. For the novice, these should provide an excellent starting point; for the experts, they should stimulate re-examination, and updating, of their own toolkits.

Steve has resisted any temptation to offer a methodology or recipe. Data modelers have had their share of "one approach fits all" solutions. The profession has, I hoped, matured to the stage where we realize that what we require is an extensive common body of knowledge and the ability to adapt it.

In this book, we have not only a substantial contribution to the data modeling profession's body of knowledge, but a mapping out of new territory for debate and discussion. I hope that both practitioners and researchers will take up the challenge to explore further these important areas of data modeling practice.

Graeme Simsion
September 2001

INTRODUCTION

Do you find yourself always packing the same items before you go away on vacation? I usually find myself packing a toothbrush, travel alarm, razor, shaving cream, and so on. These items are important for the comfort of my vacation. When I forget any of them, I usually have to purchase them at a local store. Bringing these items with me saves the time and expense of shopping for replacements.

Similarly, when we are about to embark on a data modeling adventure, there is a set of items, or tools, we need to bring with us and use on our designs. These tools take the form of spreadsheets, guidelines, questions, tips, and so on, designed to make the data modeling effort run more efficiently and result in a high-quality design. Using existing data modeling tools will save you the time and expense of creating your own tools or not using tools at all. This book contains a collection of tools to make the data modeling process run more efficiently and produce high-quality data model deliverables.

Overview of the Book and Technology

A data model is the heart and soul of our applications. A good data model provides a foundation for efficient data entry and retrieval. It also needs to be consistent with other models, at least in your organization, and needs to accurately capture the appropriate business requirements. A good data model must enable an application to expand and evolve gracefully to support changing business requirements. Despite the high value attributed to the data model, I am still amazed at how often we give little thought to the process of creating a data model and how little we rely on tools and techniques to continuously improve the data modeling process.

When I teach data modeling, I usually start off with a short exercise in which I ask the students to create a data model based on a particular form or report. As I walk around the room, I am always impressed by how many different ways I see people creating the models. Sometimes people jump right into a data model, others start with spreadsheets, and still others list all of the data elements. Some of the people in the room might complete this small classroom model correctly in the allotted 10 minutes. Others might spend 10 minutes and hardly scratch the surface. One thing is certain: Those that complete the model correctly have data modeling processes or tools that work for them.

I have been data modeling since 1990 and have developed a set of processes and tools that work for me. This book contains a collection of finely tuned data modeling tools organized according to when they should occur in the life cycle. These tools will assist

us in capturing, modeling, and validating data requirements to improve the speed, accuracy, flexibility, and consistency of data warehouse and operational applications.

This book has two main purposes:

1. **To provide you with a set of data modeling tools that you can start using today on your data model designs.** This book will take you through a number of data modeling tools, starting with several tools that need to be applied before any analysis or modeling work takes place and ending by properly arranging the data elements on the model.
2. **To stimulate your imagination to create your own tools or variations of those in this text.** Because I could not possibly discuss all data modeling tools, you should be able to think up your own that are most appropriate for your assignments, organizations, and industries after reading about the tools in this book.

I wrote this book because I believe using data modeling tools that already have been proven to improve designs can save data modelers lots of time, effort, and trial and error in creating their own data modeling tools. This book fills a very important niche in our industry, because many data modeling books exist that deal with formal data modeling "how to" or are specific to a type of application, such as data warehousing. What is lacking is a book on practical tools to help with the data modeling process and data modeling deliverables. These practical tools are ones that can be applied to any type of application, regardless of whether they are reporting or operational in nature and regardless of your industry or application methodology.

I know that at certain points during the reading of this book you might ask yourself, "Are these data modeling techniques for data warehouse designs or for operational designs?" The answer is that most of the techniques presented in this text are for all types of applications. The answers or results of some of these tools might vary, depending on whether it is a reporting or operational application; however, the tools can be used for both. There are a few exceptions to this general rule, which I will mention when I discuss the specific tools in the text.

How This Book Is Organized

This book is organized into three parts, according to when these tools should be applied in the data modeling process. For example, the Subject Area Family Tree in Chapter 5 should always precede the Data Element Family Tree in Chapter 7. Although I recommend reading the text in the order in which it appears, once you have read Chapters 2 and 4, you will have a very good understanding of the sequence for the rest of the text. Then you can jump to the sections that most interest you. I refer back to previous tools in each chapter, however, making it more logical to read the text from beginning to end.

Here is an overview of each of the three parts:

- **Part 1, Building the Foundation.** Chapters 1 through 4 offer several tools to help you as the data modeler utilize the data modeling education and communication process.

- **Part 2, Analyzing the Requirements.** Chapters 5 through 7 focus on capturing and validating the subject area requirements for an application, as well as on the detailed data elements that will provide the inputs to our logical data modeling phase.
- **Part 3, Modeling the Requirements and Some Advice.** Chapters 8 through 10 focus on creating the optimal logical and physical data models for our application. A series of tools is presented for modeling the data requirements in a flexible way, while considering the database performance and storage ramifications. As a bonus, Chapter 11 is included in this part. Chapter 11 concludes this book with some advice that I have learned over the years and continuously follow as a data modeler.

Here is a summary of each chapter:

Chapter 1, "Using Anecdotes, Analogies, and Presentations to Illustrate Data Modeling Concepts," focuses on the most effective ways to clearly communicate facets of data modeling. Anecdotes are short stories that can work very well to explain a concept or term. Analogies compare data modeling concepts with something the audience is very familiar with, to highlight some of the data modeling traits. Presentation steps are the sequence of steps to go through when creating a data modeling presentation.

Chapter 2, "Meta Data Bingo," helps define the standard types of meta data for your project and organization. Meta Data Bingo is a game where the people on your project team complete Bingo cards identifying which types of meta data are most important to capture. These Bingo cards capture meta data at a number of different levels, including project, data model, subject area, entity, and data element levels of detail.

Chapter 3, "Ensuring High-Quality Definitions," focuses on a tool called the Definition Checklist. Examples of applying the Definition Checklist at the subject area, entity, and data element levels are provided.

Chapter 4, "Project Planning for the Data Modeler," includes four project planning templates that contain the complete and sequential set of tasks required to successfully finish data modeling deliverables in a realistic timeframe.

Chapter 5, "Subject Area Analysis," offers tools to complete the deliverables for identifying and capturing the subject areas for an application. The Subject Area Checklist is a complete list of subject areas within the new application, along with their definitions. The Application Subject Area CRUD (Create, Read, Update, and Delete) Matrix contains the subject area gaps and overlap that can exist between your new application and existing applications. This is a powerful tool for scoping your application. The In-the-Know Template identifies the people and documentation you will need as resources to complete your data modeling deliverables of this new application. The Subject Area Family Tree contains the source applications for each subject area and several other critical pieces of information. The Subject Area Grain Matrix captures the reporting levels for each measurement or fact subject area using a spreadsheet format.

Chapter 6, "Subject Area Modeling," focuses on three types of subject area models, each being a very powerful validation and scoping tool. The Business Clean Slate model helps us understand a business area independent of any applications. The Application Clean Slate builds on the Business Clean Slate and focuses only on what is important for the application. The Early Reality Check compares the new application with an existing application architecture to assess overlap and impact.

Chapter 7, "Logical Data Analysis," presents four powerful data element capture and validation tools. The Data Element Family Tree captures data element name, alias, definition, business purpose, default value, transformations, format, and nullability. The Data Element Grain Matrix captures the relationships between the facts and their reporting levels. The Data Quality Capture Template contains the criteria and comparison information between data and meta data, and the Data Quality Validation Template provides proof that the data quality of each data element has been properly reviewed.

Chapter 8, "The Normalization Hike and Denormalization Survival Guide," presents the tools for normalizing and denormalizing your data requirements. The Normalization Hike is a set of rules and guidelines that can lead you to the summit of complete understanding for your application. The Denormalization Survival Guide is a question-and-answer approach to determining where to denormalize your data model. When you are done asking these questions for each relationship, you will have a physical data model at the appropriate level of denormalization.

Chapter 9, "The Abstraction Safety Guide and Components," helps minimize the impact future data requirements will have on our model and the resulting database design. The Abstraction Safety Guide is a set of three questions that will help you determine where, if at all, you need to abstract on your data models. The Abstraction Components tool is a collection of the most useful of these abstraction building blocks. The components I discuss in this chapter are those you can use in your own application models to replace sections of your models that need more flexibility. These components can exist at the entity, relationship, or data element levels.

Chapter 10, "Data Model Beauty Tips," takes your design beyond the immediate application requirements, by focusing on tips for improving the visual appearance of the logical and physical data models. These tips are offered at the entity, relationship and data element levels of detail.

Chapter 11, "Planning a Long and Prosperous Career in Data Modeling", focuses on my advice, which I follow as a data modeler. This advice consists of what I have learned over the years, either from my own experiences and from the successes and failures of those around me. Following this advice can help you become a more successful data modeler. This advice is phrased in the format of a Top Ten list.

Notation and Structure in This Book

I have used several consistent formats to show information throughout the chapters.

NOTE

I show Notes, Warnings, and Tips throughout this text in this format. In this way you can easily spot these as you read each chapter. Notes provide additional information on the topic being discussed, Warnings contain pitfalls and problems you want to avoid, and Tips are short yet important words of advice.

I use italics to discuss real-life situations you might one day find yourself in. For example, in Chapter 7 you will see this story:

> *You have completed all of the subject area analysis tools for your application, including the Subject Area Family Tree. Now what? You need to identify the data elements within each subject area, along with their sources and any transformations. You need to take the Subject Area Family Tree down to the next level. What you identify at this detailed level will be the data elements that will be used in the remainder of the development. This means that data elements we do not identify in this stage will probably not exist in the final application. Therefore, it is extremely important to organize these data elements in as simple and clear a way as possible to maximize capturing the most complete and accurate information. We need the Data Element Family Tree.*

In addition, at the beginning of this Introduction and at the beginning of each of the chapters is a short story that relates a personal vacation experience to the tools in each chapter. There are two areas I find very near and dear to my heart: data modeling and vacation. So why not bring them both into each chapter?

You will also note that each chapter has similar headings:

About This Chapter. Describes in a few paragraphs what is contained in the chapter, along with the sequence of topics to be discussed and a very short overview of each of the tools contained in the chapter. Also in this section there usually are a few sentences about how this chapter relates to the previous chapters in the text.

What Is This Tool? An explanation of the tool, including its goals and usually a few simple examples. Note that this section and the next two sections are repeated for each tool in the chapter.

Using the Tool. Includes the steps you would take to apply this tool.

The Tool In Practice. Contains a detailed example of applying the tool, using the steps described under the section Using The Tool.

Summary. Briefly summarizes the key points from the chapter and relates the chapter to subsequent chapters.

Who Should Read this Book

This book is for you if you have some familiarity with data modeling and data modeling concepts. Included are data modelers and administrators, analysts, designers, and system and data architects. You should not read this book if you are brand new to

data modeling, because there are many very good introductory texts on data modeling, some of which are listed in the suggested reading list at the end of this book. You should read this book if you have had some practical data modeling experience. I strongly believe that even those of us with a dozen or more years of data modeling experience might find a few useful tools and techniques between the covers of this book.

If you have less than 3 years' experience in data modeling, I would highly recommend reading this book from cover to cover. If you have more than 3 years' experience, I would start with Chapter 4, "Project Planning for the Data Modeler," which provides a good overview for Chapters 5 through 10 and will help you navigate directly to the sections of the text that most interest you. If you have a lot of experience, I would recommend skipping the section Normalization Hike in Chapter 8 and reading only the second half of Chapter 8, What Is the Denormalization Survival Guide. For all, I recommend reading Chapter 11 at some point. Although it is short, it contains valuable advice for the data modeler.

I would also recommend marking those sections that you find most interesting in this text and referring back to them as you are doing your data modeling activities. Many times when we read a text, we nod our heads with understanding as we complete each chapter but forget to apply the information as we are actually doing the work. I recommend using this book as an active reference as you are modeling. For example, you might ask yourself, "How do I structure my Data Element Family Tree again?" and then quickly find the answer in Chapter 7.

What's on the Web Site?

If you visit my Web site, www.wiley.com/compbooks/hoberman, you will find additional tools and templates and updates for existing tools from this text. If you do not want to recreate some of the spreadsheets in this book, you can go to this Web site and download an empty spreadsheet as your starting point. I also will continue to update this Web site with new tools and advice for the data modeler. This Web site also contains pointers to some of my favorite data modeling sites on the World Wide Web.

You can contact me through the companion Web site or at me@stevehoberman.com.

From Here

I have written this book with the intention of making it very practical and having it contain information that easily can be applied to any type of application. I would like you to use your imagination in dreaming up new tools as you are reading about the tools in these pages. Think up new tools or customizations to the tools included herein that can directly impact your current assignments.

As the field of data modeling increases in importance, there will be more demands placed on the data modeler. To look at it in a more positive light, there will be more

challenges and exciting opportunities for the data modeler. These opportunities translate into quicker turnaround for data models and more flexible and efficient resulting designs. In other words, tools such as those in this text will become critical to successful designs, not only in our current environment but also in the near future.

ACKNOWLEDGMENTS

I can summarize my acknowledgements for this book with the following equation:

Wife + Reviewers + Managers + Coworkers + Family + Me = Book

Input and support from all of these people helped me complete this book.

Wife. Being my partner through everything, and this book was no exception, Jenn was very supportive in my need to work what seemed like endless nights and weekends. Jenn not only reviewed each chapter but also took on additional household responsibilities for 8 months, letting me type away without diversion. While writing this text, I was excused from shopping, cooking, laundry, cleaning, mowing grass, paying bills, and the list goes on. (I am hoping that I will continue to be excused now that the book is done.)

Reviewers. This content of this book was enhanced significantly with the help of professional reviewers. I thank Bruce Horowitz, Emilie Herman, and Irving Nichols for their help in reviewing and proofing this text. Bruce has an incredible amount of experience in the field, and he provided both advice on broad subject matters and detailed comments on each chapter. Emilie from John Wiley & Sons coached me through each step along the way, offering timely and valuable comments on each chapter. Irving (a.k.a. Mr. N) provided many excellent comments on the tone of the text and opened my eyes to the difference between "complement" and "compliment."

Managers. Over the years in my career, I was very lucky to have great data administration and data modeling managers. I thank Cynthia Silber, Artie Mahal, and Phil Maxson for their insight and mentorship, and for giving me the opportunity to work on challenging projects. Cynthia taught me to "feel the data." I admire Artie's passion for data and his ability to tell a great story. Phil helped me understand the communication and education sides to data modeling necessary for its success.

Coworkers. I have worked with talented groups of people over the years and am grateful for the interactions and challenges they have provided, which have broadened my understanding of this field.

Family. I thank my family for their support, advice, and sense of humor during this project, including our little dog Francis, who stood guard at my office door while I worked into the night.

PART ONE

Building the Foundation

Have you ever been in a situation where a lack of effective communication with the project manager led to unreasonable expectations from you as the data modeler? An example is a situation where unrealistic timeframes to complete the models were dictated; another is where the project team felt that many of the data modeling activities were unnecessary and a waste of time. The project manager, the data modeler, and the rest of the project team need to have realistic and mutually acceptable expectations of the data modeling activities. Expectations must be realistic in terms of which modeling tasks are required and how long it should take to complete them. Expectations must be mutually acceptable in that all members of the project team, including the data modeler, agree to and understand the modeler's task and time commitments.

Realistic and mutually acceptable expectations do not happen automatically, nor are they solely arrived at through the power of positive thinking. In your role as data modeler, you have the capability and obligation to educate and influence. These communication prerequisites form the foundation of the application analysis and design activities. Having this foundation in place before the design work begins will increase the project manager's satisfaction with and appreciation of the overall modeling activities. Therefore, this foundation is critical for a successful modeling experience.

Part 1 of this book, "Building the Foundation," offers several tools to help you as the data modeler utilize the data modeling education and communication process. Chapters 1 through 4 contain tools that focus on aspects of data modeling education and communication. Here is the purpose of each of these four chapters:

Clearly explain data modeling concepts. Chapter 1, "Using Anecdotes, Analogies, and Presentations to Illustrate Data Modeling Concepts," focuses on the most effective ways I have found to clearly communicate facets of data modeling. *Anecdotes* are short stories that can work very well to explain a concept or term. *Analogies* compare data modeling concepts with something the audience is very familiar with to highlight some of the data modeling traits. *Presentation steps* are the sequence of steps to go through when creating a data modeling presentation.

Gain agreement on the required types of meta data. Chapter 2, "Meta Data Bingo," will help define the standard types of meta data for your project and organization. Meta Data Bingo is a game where the people on your project team complete Bingo cards identifying which types of meta data are most important to capture. These Bingo cards capture meta data at a number of different levels of detail, including project, data model, subject area, entity, and data element levels.

Improve the quality and consistency of definitions. Chapter 3, "Ensuring High-Quality Definitions," focuses on a tool called the Definition Checklist. Examples of applying the Definition Checklist at the subject area, entity, and data element levels are provided.

Offer a set of data modeling tasks and how they fit into the larger development life cycle. Chapter 4, "Project Planning for the Data Modeler," includes four project planning templates that contain the complete and sequential set of tasks required to successfully finish data modeling deliverables in a realistic timeframe.

CHAPTER 1

Using Anecdotes, Analogies, and Presentations to Illustrate Data Modeling Concepts

While vacationing in Europe, we decided to spend a few days at a very small village in Northern Italy. It was an extremely picturesque town surrounded by snow-capped mountains full of great hiking trails. There were only four restaurants in the town, and the first one we decided to try was located in a building several hundred years old. On entering, we were immediately impressed with the restaurant's atmosphere and character—lots of antiques and paintings, with the warm smell of a fireplace and food. After we were seated, we realized that the restaurant did not use menus. Apparently any food that is seasonable or available is served for dinner. This would not have been a problem except that no one in the restaurant spoke English and the only Italian I knew was the word *ciao,* which means *bye*.

We needed a way to clearly communicate our dinner preferences. It took several minutes of unsuccessful and frustrating attempts at communication with the waiter before an idea came to us. We started to make animal sounds. Apparently animal sounds are universal. By mooing, we were able to inquire whether beef was available that evening. We were also able to oink and shake our heads, meaning we did not want pork. We successfully acted out all of our animals and were served exactly what we expected. I was amazed at how well this technique worked. We were able to clearly communicate using this animal sound approach. I think this dinner is a great example that no matter how different your backgrounds or interests may be, there are always ways for people to communicate clearly.

For many people with limited application development experience, the field of data modeling can sometimes be just as foreign as a foreign language. This can lead to a lack of understanding of data modeling concepts and terminology, causing confusion and unrealistic expectations in completing the modeling deliverables. We can avoid this confusion by clearly explaining the different aspects of data modeling. To successfully explain data modeling concepts at times requires being as creative as imitating a cow in a restaurant. We need to think of innovative and creative approaches to get our message across. Sometimes a short story or anecdote can clearly explain a data

modeling concept. Sometimes analogies can be a very powerful technique. Sometimes a short and focused presentation will suffice. I find that one or a combination of anecdotes, analogies, and presentations can be used to effectively communicate with and in some cases influence those who are having difficulty grasping data modeling concepts and terms.

About This Chapter

This chapter focuses on the most effective tools for clearly communicating data modeling concepts. Some people with whom we work on projects, such as managers and business users, may not easily grasp concepts such as a data model or a data warehouse. How effective do you think it would be to rattle off the textbook definition of a data model to these individuals? Their eyes probably would glaze over, and although they may occasionally nod their heads in the hope of understanding, most likely they will be bored out of their minds and even more confused than before. What is needed is a simple and captivating approach to explain modeling concepts.

I sometimes am asked what I do for a living. As a data modeler, how would you respond? Because the people asking usually have very little technical background, when I proudly say, "I am a data modeler," I often receive blank expressions. I could reply with something such as, "I create representations of the data requirements for a system that can be then transformed into a relational database where the actual data can be entered and retrieved, blah, blah, blah." How many people would really understand or appreciate that explanation? Or, I could think of a simple and interesting way to explain what I do and say, "I create blueprints for applications" or "I make sure applications contain the correct and complete information that the business needs."

There are tools that improve the communication process. We will discuss three data modeling communication tools within this chapter:

Anecdotes. Short stories can work very well to explain a concept or term. Most of us love to hear a story. We look forward to knowing what is going to happen next. You can use a combination of humor, facts, and relevant situations as input to clearly explain a complex topic. We will review the steps to create a data modeling anecdote and go through a detailed example of an actual anecdote that I have used many times.

Analogies. *Analogies* are comparisons between two or more concepts. Analogies can compare something the audience is familiar with to a data modeling concept we would like them to understand. We will discuss a work sheet to help with creating an effective analogy and go through a number of my most favorite data modeling analogies. Six of these data modeling analogies will be described. Because I often have used these analogies and they are effective, I will dedicate a fairly large portion of this chapter to this topic.

Presentation steps. How often have you listened to a presentation and lost interest in it because you could not understand how it related to you? When we explain data modeling concepts through formal presentations, we need to make sure our

material has been tailored or customized so that it hits home with the audience and demonstrates how this information directly impacts them. We will review the steps to create a presentation that gets this customized message across to your audience. Well-structured presentations can clearly communicate the required concepts at the appropriate level of detail with content that the audience can relate to and appreciate. We will discuss the steps for creating these customized presentations and go through a detailed example.

If you visit the companion Web site, www.wiley.com/compbooks/hoberman, you will find templates for each of the tools in this chapter, additional tools and more information about tools within this book, including empty templates that you can download.

What Are Data Modeling Anecdotes?

In our normal daily communication, we probably tell and hear many stories, or anecdotes, on a wide range of topics. Some examples are stories of what happened to us over the weekend, stories of things that have happened to people we know, and stories related to our work projects. These anecdotes help strengthen relationships with those around us and entertain and educate us. We can visualize what the speaker is saying. Sometimes, when the story is complete, we leave with a message or additional understanding we did not have before. Anecdotes are extremely effective in explaining data modeling concepts for a number of reasons:

They create lasting visual. Our minds are much more easily able to absorb and retain a story than a fact, a statement, or an explanation. For example, on a job interview simply telling the interviewer that you are a hard worker would not have the same lasting impact as would describing a situation or story where you had to work nights and weekends to complete a task. The interviewer picturing you working nights and weekends creates a much more lasting impression than does just hearing you say you are a hard worker. There are many courses that teach how to improve your memory. Most of these memory improvement techniques involve creating a story or visual image for the concept you need to remember. For example, if you would like to memorize the name Mary Doe, you might visualize a deer wearing a name tag that says Mary. This visual image might sound rather strange, but I bet that even a few paragraphs from now you will still remember the name Mary Doe. A manager with whom I once worked is an excellent storyteller. I still remember many of his stories. Once he used a story to convince a senior level manager of the benefits of data modeling. This manager was so inspired that he told his entire staff, "No application gets developed without a data model." Whenever I think of this story, I have a visual image of him passionately communicating why data modeling is so important.

They captivate and entertain. A story can grab your attention and keep you at the edge of your seat. As children, we were always eager to hear a story: "Read me about those three little pigs one more time!" When we get older, we still have this interest in hearing stories. Telling a story is so much more captivating and entertaining than explaining a concept in dry technical terms. Have you ever been to a