Design Tip #108 When is the Dimensional Model Design Done?

By Bob Becker

There is a tendency for data warehouse project teams to jump immediately into implementation tasks as the dimensional data model design is finalized. But we'd like to remind you that you're not quite done when you think you might be. The last major design activity that needs to be completed is a review and validation of the dimensional data model before moving forward with implementation activities.

We suggest you engage in a review and validation process with several successive audiences, each with different levels of technical expertise and business understanding. The goal is to solicit feedback from interested people across the organization. The entire DW/BI team benefits from these reviews in the form of a more informed and engaged business user community. At a minimum, the design team should plan on talking to three groups:

- Source system developers and DBAs who can often spot errors in the model very quickly

- Core business or power users who were not directly involved in the model development process

- Broader user community.

Typically the first public design review of the detailed dimensional model is with your peers in the IT organization. This audience is often comprised of reviewers who are intimately familiar with the target business process because they wrote or manage the system that runs it. Likely, they are partly familiar with the target data model because you've already been pestering them with source data questions.

The IT review can be challenging because the reviewers often lack an understanding of dimensional modeling. In fact, most of them probably fancy themselves as pretty proficient third normal form modelers. Their tendency will be to apply transaction processing-oriented modeling rules to the dimensional model. Rather than spending the bulk of your time debating the merits of different modeling disciplines, it is best to be prepared to provide some dimensional modeling education as part of the review process.

When everyone has the basic dimensional modeling concepts down, begin with a review of the bus matrix. This will give everyone a sense for the project scope and overall data architecture, demonstrate the role of conformed dimensions, and show the relative business process priorities. Next, illustrate how the selected row on the matrix translates directly into the dimensional model. Most of the IT review session should then be spent going through each individual dimension and fact table.

Often, the core business users are members of the modeling team and are already intimately knowledgeable about the data model, so a review session with them is not required. However, if they

have not been involved in the modeling process, a similar, detailed design review should be performed with the core business users. The core users are more technical than typical business users and can handle more detail about the model. Often, especially in smaller organizations, you can combine the IT review and core user review into one session. This works if the participants already know each other well and work together on a regular basis.

Finally, the dimensional data model should be shared with the broader community of business users. Often, this is a very large audience. In such cases a representative subsection of the users can be selected. This session is as much education as it is design review. You want to educate people without overwhelming them, while at the same time illustrating how the dimensional model supports their business requirements. In addition, you want them to think closely about how they will use the data so they can help highlight any shortcomings in the model.

Create a presentation that starts with basic dimensional concepts and definitions, and then describe the bus matrix as your enterprise DW/BI data roadmap. Review the high level model, and finally, review the important dimensions, like customer and product.

Allocate about a third of the time to illustrate how the model can be used to answer a broad range of questions about the business process. Pull some interesting examples from the requirements documentation and walk through how they would be answered. More analytical users will get this immediately. Reassure the rest of your audience that most of this complexity will be hidden behind a set of easy-to-use structured reports. The point is to show you can answer just about every question they might ask about this business process.

There are usually only minor adjustments to the model once you get to this point. After working so hard to develop the model, the users may not show what you consider to be appropriate enthusiasm. The model may seem obvious to the users and makes sense; after all, it is a reflection of their business. This is a good thing; it means you have done your job well!