Our SoundStage management and users initially identified the entities listed in Table 8-5. Notice how the definitions contribute to establishing the vocabulary of the system.

**> The Context Data Model**

The next task in data modeling is to construct the context data model. The context data model should include the fundamental business entities that were previously discovered as well as their natural relationships.

Relationships should be named with verb phrases that, when combined with the entity names, form simple business sentences or assertions. Some CASE tools, such as System Architect, let you name the relationships in both directions. Otherwise, always name the relationship from parent to child.

We have completed this task in Figure 8-13. This figure represents a data model created in System Architect. Once we begin mapping attributes, new entities and relationships may surface. The numbers below reference the same numbers in Figure 8-13. The ERD communicates the following:

1. **An AGREEMENT binds one or more MEMBERS.** While relationships may be named in only one direction (parent to child), the other direction is implicit. For example, it is implicit that a MEMBER is bound to one and only one AGREEMENT.
2. **A MEMBER has conducted zero, one, or more TRANSACTIONS.** Implicitly, a given TRANSACTION was conducted by one and only one MEMBER.
3. **A MEMBER ORDER is a TRANSACTION.** In fact, a given MEMBER ORDER may correspond to many TRANSACTIONS (for example, a new member order, a canceled member order, a changed member order, etc.). But a given TRANSACTION may or may not represent a MEMBER ORDER.
4. **A PROMOTION features one or more PRODUCTS.** Implicitly, a PRODUCT is featured in zero, one, or more PROMOTIONS. For example, a CD that appeals to both
FIGURE 8.13: The SoundStage Context Data Model
FIGURE 8.14: The SoundStage Key-Based Data Model.
**Figure 6.15:** Two-stage Key-Based Data Model with a Generalization Hierarchy
An attribute's domain should not be based on logic. For example, in the SoundStage case we learned that the values of media were dependent on the type of product. If the product type is a video, the media could be VHS tape, 8mm tape, laserdisc, or DVD. If the product type is audio, the media could be cassette tape, CD, or MD. The best solution would be to assign separate attributes to each domain: AUDIO MEDIA and VIDEO MEDIA.

Figure 8-16 provides the mapping of data attributes to entities for the definition phase of our SoundStage systems project. While the fully attributed model identifies all...
Figure 2.23: [Diagram Description]