



Using Event Modeling to Help Capture Information Requirements

Steve Farrell and Frank Ruggiero

Steve Farrell addressed the Atlanta Chapter of the Data Administration Management Association (DAMA) on September 17, 1998, in the Advanced Strategies Training Center and discussed with the attendees how event modeling can be used to capture information requirements. This article is a synopsis of his presentation.

There are three important assumptions that we are going to make about capturing information requirements. First, we are doing "business analysis" not "technical design". Second, we are interested in a "conceptual" model, one portraying the most accurate business concepts. And last, we are using some type of information modeling technique (object or data modeling using entity-relationship diagramming).

Here is a simple example of what we mean by accurate concepts. If I were to put three six packs of paper towels and two twelve packs of paper towels in front of three of the paper towel company's product experts, and then asked the question – how many products are in front of you? I could conceivably get three different answers. From a sales perspective there are five products to be sold. From a packaging or merchandising perspective, we may only have two products. From a manufacturing perspective we may have forty-two products. The point is that the goal of the conceptual model is to uncover these differing concepts of "product" and clearly represent each view.

We must also remember that there are five business aspects, and five types of modeling to consider in our analysis:

- *Object/Data Modeling – entities and their relationships, roles, attributes, etc (what);*
- *Event Modeling – occurrences that require business response (when);*
- *Process Modeling – the work that needs to be accomplished (how);*
- *Location Modeling – sites where the business is happening (where); and*
- *Socio-Political Modeling – the people and the groups involved (who).*

Each aspect has a different type of analysis performed on it that focuses solely on that aspect. Our focus today is on Event Modeling as an augmentation to your object/data models.

Information requirements captured in a data model will contain objects such as "person," not "employee." That "person" may have multiple roles, based on relationships, such as "employee," "customer," "stockholder," etc. The relationship that may exist is "organization employs person." Finally, each "employee" may have a relevant state or status such as "active employee," "retired employee," "ex-employee," etc. We only have one object that really exists in the world: a person, but there can be a variety of roles that can be played by that object, and any number of states that an object or a role can be in at a particular point in time.

Any object may go through a transition of states, and any relationships between objects may also undergo state transition. In modeling, you must determine what are the relevant state changes that will be important to model for accurate understanding and specification of business information requirements.

That brings us to Event Modeling and its use in augmenting your data models. Figure 1 illustrates a very basic example of an Event Model used to depict the sale of a house. In selling a house, there are several state changes. From its initial state it may go into a "listed house" state, then on to an "under contract house" and finally a "sold house". You can see that the dotted line represents the event that triggers a state change and the solid line points to processes that are triggered along with the change of state. The diagram clearly shows each state that is possible for a given house. This represents the entire informational domain for this type of house status. Even though this is an event model, it helps us discover, verify and document an important information requirement.

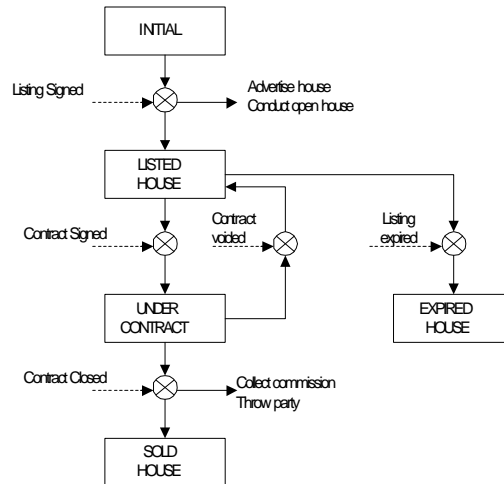


Figure 1

Every entity, role, or relationship has at least one life cycle (birth and death!). To illustrate this, we have added an illustration relating to the planning and development of a subdivision. (The models are too large to include here and can be found on our web site, www.AdvancedStrategiesInc.com.) In this subdivision model, you can see that if everything went according to plan, “subdivision” would go through seven different state transitions before finalization. Similarly, “site plan” could go through as many as nine different states. A critical information requirement for the county is to be able to report on the status of each subdivision and each site plan. Another key information requirement is to be able to provide statistics on how many subdivisions reached a certain status within a certain period of time. This emphasizes the importance of using other modeling tools to complement, or augment the main modeling tool – and in particular the value of event modeling as an adjunct to object/data modeling.

The question was asked, “When should we consider getting out of data modeling and shifting to an event model?” The answer is this: whenever you are faced with an object (or role/relationship) that seems to be called different things at different points in time - for example: active employee, retiree, etc.– that’s the point at which you can move to an event model to clarify status issues. The different states may be handled as status attributes or as a derivable rule-based collection of attributes on your data model.