Exercise Solutions
for TDWI Data Modeling

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Exercise One
Modeling Business Domains

OVERVIEW
This exercise asks questions specific to your organization, making it impractical to provide a single “correct” solution. The three examples shown in the course book also make it clear that no “one right answer exists for domain modeling. The correct answer is a model that:

- Effectively communicates the mission or purpose of your organization.
- Identifies the major categories of resources needed to carry out the mission.
- Is expressed in language that is used by the business.

TESTING YOUR SOLUTION
The following questions help to test the utility of a domain model. Ideally you can answer “yes” to each of these questions.

1. Does the model contain fewer than seven mission domains?
2. Does the model contain fewer than seven resource domains?
3. Is the total number of domains – both mission and resource – fewer than ten?
4. Does each mission domain represent segment of the business that is recognizable to your customers?
5. Does every domain remain true and correct even if organizations or business processes change?
6. If you removed any one of the mission domains would the remaining set still represent a viable and sustainable enterprise?
7. Is every domain expressed in language that is meaningful to the senior officers of your organization?

STAKEHOLDERS
The exercise also asked you to identify a list of stakeholders needed to develop a domain model for your organization. Does that list include both business and technical stakeholders? Have you identified more business than technical stakeholders? Do they represent a broad cross-section of the organization? Do they represent multiple levels in the organization (executive, line management, etc.)?

REVIEW OF YOUR SOLUTION
You may submit your questions and your solution to this exercise for review and comment from TDWI by emailing it to exercises@tdwi.org.
Exercise Two
Modeling Business Subjects

OVERVIEW
Similar to domain modeling, this exercise asks questions specific to your organization. It is impractical to provide a single “correct” solution.

TESTING YOUR SOLUTION
The following questions help to test the utility of a subject model. Ideally you can answer “yes” to each of these questions.

1. Does each subject represent a group of entities about which data needs to be collected and managed?
2. Does every subject align with a domain in the domain model?
3. Is the total number of subjects fewer than twenty?
4. Are important subjects from the generic model represented in some form in your subject model?
5. Can you identify the differences between the generic model and your model and explain the reasons for each?
6. Is every subject named using language that makes sense to the business?
7. Is every subject named using a singular noun?

REVIEW OF YOUR SOLUTION
You may submit your questions and your solution to this exercise for review and comment from TDWI by emailing it to exercises@tdwi.org.
### Exercise Three

**Mapping Business Questions**

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<th>auto loss frequency</th>
<th>reason for claim</th>
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<th>book of business value</th>
<th>earned premium value</th>
<th>loaded loss ratio</th>
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Exercise Four
Logical Dimensional Modeling

NAME THE METER

• product profitability

NAME THE MEASURES

• simple loss ratio
• loaded loss ratio

IDENTIFY THE DIMENSIONS AND HIERARCHIES

sales organization dimension
• underwriting team has underwriters
• underwriter has agencies
• agency has agents

time dimension
• year has quarters
• quarter has months

claim dimension
line of business
(has no subordinates of interest to these business questions)

DRAW THE LOGICAL DIMENSIONAL MODEL
Exercise Five
Star Schema Design

SALES ORGANIZATION
underwriting_team_id
underwriting_team_name
underwriter_id
underwriter_name
agency_code
agency_name
agent_id
agent_name
org_key

PRODUCT PROFITABILITY
simple_loss_ratio
loaded_loss_ratio
cost_ofClaims
paid_premium_dollars
earned_premium_dollars
time_key
org_key
LOB_key

TIME
year
quarter_code
quarter_description
month_number
time_key

LINE OF BUSINESS
LOB-code
LOB_name
LOB_key