

4.1 A CASE STUDY: THE SUPER GRAIN CORP. ADVERTISING-MIX PROBLEM

Claire Syverson, vice president for marketing of the Super Grain Corporation, is facing a daunting challenge: how to break into an already overly crowded breakfast cereal market in a big way. Fortunately, the company's new breakfast cereal—Crunchy Start—has a lot going for it: Great taste. Nutritious. Crunchy from start to finish. She can recite the litany in her sleep now. It has the makings of a winning promotional campaign.

However, Claire knows that she has to avoid the mistakes she made in her last campaign for a breakfast cereal. That had been her first big assignment since she won this promotion, and what a disaster! She thought she had developed a really good campaign. But somehow it had failed to connect with the most crucial segments of the market—young children and parents of young children. She also has concluded that it was a mistake not to include cents-off coupons in the magazine and newspaper advertising. Oh well. Live and learn.

But she had better get it right this time, especially after the big stumble last time. The company's president, David Sloan, already has impressed on her how important the success of Crunchy Start is to the future of the company. She remembers exactly how David concluded the conversation. "The company's shareholders are not happy. We need to get those earnings headed in the right direction again." Claire had heard this tune before, but she saw in David's eyes how deadly serious he is this time.

Claire often uses spreadsheets to help organize her planning. Her management science course in business school impressed upon her how valuable spreadsheet modeling can be. She regrets that she did not rely more heavily on spreadsheet modeling for the last campaign. That was a mistake that she is determined not to repeat.

Now it is time for Claire to carefully review and formulate the problem in preparation for formulating a spreadsheet model.

The Problem

Claire already has employed a leading advertising firm, Giacomi & Jackowitz, to help design a nationwide promotional campaign that will achieve the largest possible exposure for Crunchy Start. Super Grain will pay this firm a fee based on services performed (not to exceed \$1 million) and has allocated an additional \$4 million for advertising expenses.

Giacomi & Jackowitz has identified the three most effective advertising media for this product:

Medium 1: Television commercials on Saturday morning programs for children.

Medium 2: Advertisements in food and family-oriented magazines.

Medium 3: Advertisements in Sunday supplements of major newspapers.

The problem now is to determine which *levels* should be chosen for these *advertising activities* to obtain the most effective *advertising mix*.

To determine the *best mix of activity levels* for this particular advertising problem, it is necessary (as always) to identify the *overall measure of performance* for the problem and then the contribution of each activity toward this measure. An ultimate goal for Super Grain is to maximize its profits, but it is difficult to make a direct connection between advertising exposure and profits. Therefore, as a rough surrogate for profit, Claire decides to use *expected number of exposures* as the overall measure of performance, where each viewing of an advertisement by some individual counts as one exposure.

Giacomi & Jackowitz has made preliminary plans for advertisements in the three media. The firm also has estimated the expected number of exposures for each advertisement in each medium, as given in the bottom row of Table 4.1.

The number of advertisements that can be run in the different media are restricted by both the advertising budget (a limit of \$4 million) and the planning budget (a limit of \$1 million for