GRANDMA STUDOR'S BAKERY, INC.

Grandma Studor's Bakery, Inc. (GSB), is a major national supplier of bread, sweet rolls, cakes, and other bakery products. In addition to its bakery products, Grandma Studor's makes and sells well-known brands of baking mixes, flour, prepared dough, and frozen pizza. GSB's industrial foods division sells a wide range of biscuit, doughnut, and other dough mixes, several types of specialty flours to bread and cereal makers, and various commodities and feed ingredients. In 1998 GSB made after tax profits of $92 million on sales of about $1.5 billion.

Materials Management

The GSB materials management area purchased about $200 million of ingredients and commodities during 1998. One of GSB's most important commodities and ingredients is flour. GSB treats flour as a commodity that is used as an important raw material but also sells flour to others and deals in flour and wheat futures to reduce risk related to price fluctuations. In 1998 one of the senior buyers, David Prince, managed about $90 million in transactions relating to flour and wheat.

GSB uses many different kinds of flour in its various products. GSB manufactures flour as well as buying it on the open market, and since GSB produces several different kinds of flour, GSB must buy several different varieties of wheat. Prince attempts to minimize the final cost of a hundredweight of flour, which is a rather complicated task because there are so many variables involved, and they are changing all the time. The costs of flour, flour futures, milling flour, transporting flour, wheat, wheat futures, transporting wheat are factors that may affect the cost of a hundredweight of flour.

The Flour Commodity Report System

To manage the acquisition of the flour that GSB needs each year to control the risk and minimize the cost of this important material, Prince needs a great deal of information in order to analyze alternatives. Since things are always changing, timing is very important when buying and selling flour, wheat, and futures contracts for both. For this information Prince depends upon the flour commodity report system that is operated by his assistant, Donna Hornibrook, on her PC.

The flour commodity report system is a LOTUS 1-2-3 application consisting of seven large spreadsheets, several of which contain mostly macros. This system requires manual input of data from at least three of GSB's mainframe systems that forecast future requirements for different kinds of flour and provide current cost factors for manufacturing flour, price data from several markets, reports of actions in buying and selling, and other information. It produces histories of daily flour costs by product group and location for the past month, summaries of the days of coverage of each type of flour that GSB uses, comparisons of anticipated costs of each flour based upon their inventories and futures contracts for flour and wheat, and futures contracts outstanding, among other reports. Also, someone who understands the system can use it to explore the impact of changes in the various cost factors on the future costs of the different kinds of flour.

In January 1999, Hornibrook told Prince that her husband was being transferred to the West Coast and that she would be leaving in about a month. That precipitated a crisis for Prince and the materials management area, for she was the only person in the organization who had any idea of how to run the flour commodity report system. This system is highly manual in that Hornibrook enters data from various sources and invokes many macros to process the data and produce the reports used to manage the flour and wheat positions. Neither the LOTUS 1-2-3 spreadsheets nor the procedures Hornibrook used were documented. Even Hornibrook does not completely understand how the system works, and she does not think she could teach it to someone else.

History of the System

The system was begun in 1992 by Anthony Pizzo, who was in Prince's position as senior buyer for flour and wheat. Pizzo had

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This case was prepared by Professor E. W. Martin as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

used LOTUS 1-2-3 and thought that a spreadsheet would be helpful in keeping track of his flour and wheat requirements and commitments, so he developed the first spreadsheet. Over the next year he expanded the spreadsheet and found it useful enough that when his assistant left, he decided that he would replace him with someone who knew the computer and was skillful with spreadsheet software.

He hired Elmer Smith, an enthusiastic spreadsheet jockey who began to work with Pizzo to expand the system. A year later Pizzo was promoted to a better position within GSB and was replaced by Prince, who continued to work to expand the system. Prince was not a knowledgeable PC user, and he was quite content to have Smith operate the system and enhance it from time to time as they saw opportunities to improve it. By the time that Smith left for a better job in early 1997, the system included five spreadsheets, three of which were primarily composed of macros.

Hornibrook replaced Smith, and although she was competent in entering data into a spreadsheet, she had little prior proficiency in macros. However, before Smith left, he taught Hornibrook how to use the system, and she was able to take over its operation. During the drought in the summer of 1998, Prince began to worry about possible wheat shortages if the drought continued, so Hornibrook added two more spreadsheets to the system to provide more information to help Prince track things more closely.

Hornibrook had trouble in making some of the system changes that Prince requested. She also occasionally got results from the system that did not make sense. Hornibrook felt that the system was extremely precarious and was secretly relieved to be leaving.

The IS Department Response

When Prince learned that Hornibrook was leaving, he was frantic because he would have to manage GSB's flour purchasing flying blind. He immediately called Roy Morgan, director of the IS materials management systems group, and asked him for help. Despite the fact that the IS Department has had nothing to do with this system (and did not even know of its existence), Morgan agreed to provide all possible assistance in resolving this crisis situation.

Microsoft Excel was the standard spreadsheet package at GSB, so Morgan did not have anyone available with the depth of expertise in LOTUS 1-2-3 required to analyze this system and correct its problems. The IS group was planning to develop a corporate-wide material requirements planning (MRP) system starting in 2001 that would include a component that would serve the needs of flour and other commodity buyers, but that would be far too late to solve Prince's problem.

Therefore, Morgan suggested that the Gamma Consulting Group, which provides training and consulting to GSB and does have some LOTUS 1-2-3 expertise, be employed to analyze the system, redesign it, and rebuild it using Excel and/or other PC software.

The Consultant's Preliminary Report

Tully Shaw, the Gamma consultant assigned to this project, spent several days working with Hornibrook and Prince and prepared the following preliminary report on the problem:

> During January I met with David Prince and Donna Hornibrook to review the existing PC-based system and to discuss revising it into a new easier-to-use system for tracking flour and wheat usage, flour and wheat costs, and to assist in the buying and selling of futures at three exchanges. The existing system does not track all flours being used in all GSB products.
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> The existing system is made up of several LOTUS 1-2-3 spreadsheets. Other than the disk files containing these spreadsheets, there is no documentation for this system. The spreadsheets making up this system were authored by several different persons and are driven by macros written in a format that makes them difficult to edit.
>
> Because the existing system is in such bad shape, I do not believe the existing system should be upgraded and reused. Rather, a new system should be built. Also, the system is not really suitable for a spreadsheet, so I would suggest that it be rebuilt using Microsoft Access and Visual Basic for Applications (VBA).
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> Although the ranges currently being printed from the LOTUS spreadsheets can be helpful as a basis for designing the new system, a major task in developing this system will be to create a specification from the existing spreadsheets with the assistance of GSB staff.
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> Preliminary cost and time estimates are
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> | System Design | 30 days | $75/hour | $18,000 |
> | Programming | 25 days | $60/hour | 12,000 |
> | Procedure Manual | 5 days | $60/hour | 2,400 |
> | TOTAL (estimate) | | | $32,400 |
>
> These estimates for design allow for approximately three days for each major section of the system. This is a minimal amount of time for specification for a system of this complexity, and it could easily require more time. I estimate that the project will require at least 3.5 calendar months to complete.
>
> This is not a fixed-cost bid for this project. In view of the uncertainties involved, we would only contract for this project on an hourly basis with the costs per hour specified above.

It appears that Prince will be flying blind for at least three months.