

**Father:** We should order the invitations from Bob's Printing Shop, and that usually takes 12 days. I'll bet he would do it in five days if we slipped him an extra \$35.

**Mother:** It would take us three days to choose the invitation style before we could order them, and we want the envelopes printed with our return address.

**Mary:** Oh! That will be elegant.

**Mother:** The invitations should go out at least 10 days before the wedding. If we let them go any later, some of the relatives would get theirs too late to come, and that would make them mad. I'll bet that if we didn't get them out until eight days before the wedding, Aunt Ethel couldn't make it, and she would reduce her wedding gift by \$200.

**Father:** Ugh!

**Mother:** We'll have to take them to the post office to mail them, and that takes a day. Addressing would take four days unless we hired some part-time help, and we can't start until the printer is finished. If we hired someone, we could probably save two days by spending \$25 for each day saved.

**Mary:** We need to get gifts to give to the bridesmaids at the rehearsal dinner. I can spend a day and do that.

**Mother:** Before we can even start to write out those invitations, we need a guest list. Heavens, that will take four days to get in order, and only I can understand our address file.

**Mary:** Oh, Mother, I'm so excited. We can start each of the relatives on a different job.

**Mother:** Honey, I don't see how we can do it. Why, we've got to choose the invitations and patterns and reserve the church and . . .

**Father:** Why don't you just take \$1,500 and elope. Your sister's wedding cost me \$1,200, and she didn't have to fly people up from Guatemala, hire extra people, use airfreight, or anything like that.

#### QUESTIONS

- 1 Given the activities and precedence relationships described in the (A) case, develop a network diagram for the wedding plans.
- 2 Identify the paths. Which are critical?
- 3 What is the minimum-cost plan that meets the April 22 date?

## CASE: THE CAMPUS WEDDING (B)

Several complications arose during the course of trying to meet the deadline of April 21 for the Adams–Jackson wedding rehearsal. Because Mary Jackson was adamant about having the wedding on April 22 (as was Larry Adams, because he wanted her to be happy), the implications of each of these complications had to be assessed.

- 1 On April 1 the chairman of the Vestry Committee at the church was left unimpressed by the added donation and said he wouldn't reduce the notice period from 17 to 10 days.
- 2 A call to Guatemala revealed that the potential bridesmaid had several commitments and could not possibly leave the country until April 10.
- 3 Mother came down with the four-day flu just as she started on the guest list.

- 4 The lace and dress materials were lost in transit. Notice of the loss was delivered to the Jackson home early on April 10.
- 5 There was a small fire at the caterer's shop on April 8. It was estimated that the shop would be closed two or three days for repairs.

Mary Jackson's father, in particular, was concerned about expense and kept offering \$1,500 to Mary and Larry for them to elope.

#### QUESTIONS

- 1 Given your answers to the (A) case, describe the effects on the wedding plans of each incident noted in the (B) case.

SOURCE: ADAPTED FROM A CASE ORIGINALLY WRITTEN BY PROFESSOR D. C. WHYBANK, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, NORTH CAROLINA.

## CASE: PRODUCT DESIGN AT FORD

Ford Motor Company is ranked second on the *Fortune* 500 list of the largest U.S. industrial corporations, based on sales. Ford currently sells over 60 different models of cars. Product design is a major activity critical to the creation of the innovative products that ensure the ongoing success of the firm.

Ford has developed the Ford Product Development System (FPDS) that is used to organize the activities required to develop and deliver a new car. The firm has great experience in developing new cars, but the pressure to develop them quicker presents an ongoing challenge. The automobile market is fast changing, with the desire of consumers quickly shifting. Ford's current process requires nearly four years to develop a totally new car, one that involves a new body style and powertrain combination.

In this case, our goal is to give you a good idea of the issues related to planning the development of new vehicles at a company like Ford. The data in the case are roughly based on how Ford actually approaches the problem, but due to the amazing details associated with developing a real car, we have considerably simplified things.

A major challenge in planning the development of a car relates to the timing of the major events that must occur in order to meet the launch date. The launch date refers to the date when the car is available for ordering by dealers. Consider the fact that for a company like Ford virtually all of 60 different models that are offered are "launched" each year. Usually the year-to-year changes are minor with small changes to body style and minor engine/drive-train changes. Approximately, every four or five years a totally new car is introduced.