

The Wedding Case

On March 31st of last year, Mary Jackson burst into the family living room and announced that she and Larry Adams (her college boyfriend) were going to be married. After recovering from the shock, her mother hugged her and asked, "When?" The following conversation resulted:

Mary: April 22

Mother: What?

Father: The Adams-Jackson wedding will be the social hit of the year. Why so soon?

Mary: Because on April 22nd the cherry blossoms on campus are always in full bloom! The wedding pictures will be beautiful.

Mother: But honey, we can't possibly finish all the things that need to be done by then. Remember all the details that were involved in you sister's wedding? Even if we start tomorrow, it takes a day to reserve the church and the reception hall, and they need at least 17 days' notice. That has to be done before we can start decorating the church, which takes three days. An extra \$100 contribution on Sunday would probably cut that 17-day notice into 10 days, though.

Father: Ugh!

Mary: I want Jane Summers to be my maid of honor.

Father: But she's in the Peace Corps, in Guatemala, isn't she? It would take her 10 days to get ready and drive up here.

Mary: But we could fly her up in two days, and it would cost only \$500. She would have to be here in time to have her dress fitted.

Father: Ugh!

Mother: And catering! It takes two days to choose the cake and table decorations, and Jack's Catering wants at least 10 days' notice prior to the rehearsal dinner (the night before the wedding).

Mary: Can I wear your wedding dress, Mom?

Mother: Well, we'd have to replace some lace, but you could wear it, yes. We could order the lace from New York when we order the material for the bridesmaids' dresses. It takes eight days to order and receive the material. The pattern needs to be chosen first, and that would take three days.

Father: We could get the material here in five days if we paid an extra \$25 to airfreight it.

Mary: I want Mrs. Watson to work on the dress.

Father: But she charges \$120 a day!

Mother: If we did all the sewing, we could finish the dress in 11 days. If Mrs. Watson helped, we could cut that down to six days, at a cost of \$120 for each day less than 11 days.

Mary: I don't want anyone but her.

Mother: It would take another two days to do the final fitting. It normally takes two days to clean and press the dresses, but that new cleaner downtown could do them in one day if we pay the \$30 charge for express service.

Father: Everything should be completed by rehearsal night, and that's only 21 days from now. I bet that will be a busy day.

Mother: We've forgotten something. The invitations.

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.

Source: Chase, Jacobs, Aquilano (2006)

Questions to answer as a team

1. Given the activities and precedence relationships described in the case, develop a task list (with durations, predecessors, crash cost, and crash time) and 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?

Hints:

- Assume Mary and her mother can multi-task (multiple tasks can be worked on at the same time as long as precedence relationships are honored).
- Work begins on April 1st and the wedding takes place on April 22nd so there are 21 days to get the work done and the wedding takes place on day 22.
- Any path without slack time is critical.