

INTEGRATED PROJECT

Developing the Project Schedule

Develop an in-depth schedule for your initial project based on the Work Breakdown Structure you have completed. You will need to complete several activities at this stage: (1) create an activity precedence diagram showing the network logic for each project activity you have identified; (2) create an activity duration table showing optimistic, likely, and pessimistic activity times for each activity; and (3) create both the network diagram and Gantt charts for your project, indicating the critical path and all critical activities, total project duration, and all activities with float.

As you prepare the activity precedence diagram, consider:

- 1. Have we identified opportunities to create parallel paths or are we placing too many activities directly in a serial path?
- 2. Is our logic correct for identifying preceding and subsequent activities?
- 3. Are there some clear milestones we can identify along the precedence diagram?

As you prepare the activity duration table, you might wish to set it up along the following lines:

Activity	Duration			Est. Duration
	Optimistic	Likely	Pessimistic	
A	6	9	18	10
B	3	8	13	8

Finally, in creating the network diagram and Gantt charts, use MS Project or a comparable scheduling software package (see examples in Figures 10.26, 10.27, and 10.28a, b, and c).

Sample Project Schedule, ABCups, Inc.

Tasks	Duration (in days)
Plant manager feasibility request	1
Get technical approval	5
Determine if additional labor needed	4
Research equipment	26
Determine best suppliers	21
Meet with vendors	21
Obtain quotations from vendors	21
Pick equipment vendor	14
Negotiate price and terms	7
Obtain financing for equipment	3
Calculate ROI	3
Obtain required signatures	3
Capital approved	10
Issue purchase order	1
Equipment being built	40
Marketing new process	21
Create mailer	15
Design new brochure	9
Update Web site	9
Lay out plant for new equipment	15

Note: This is a partial activity network and schedule.

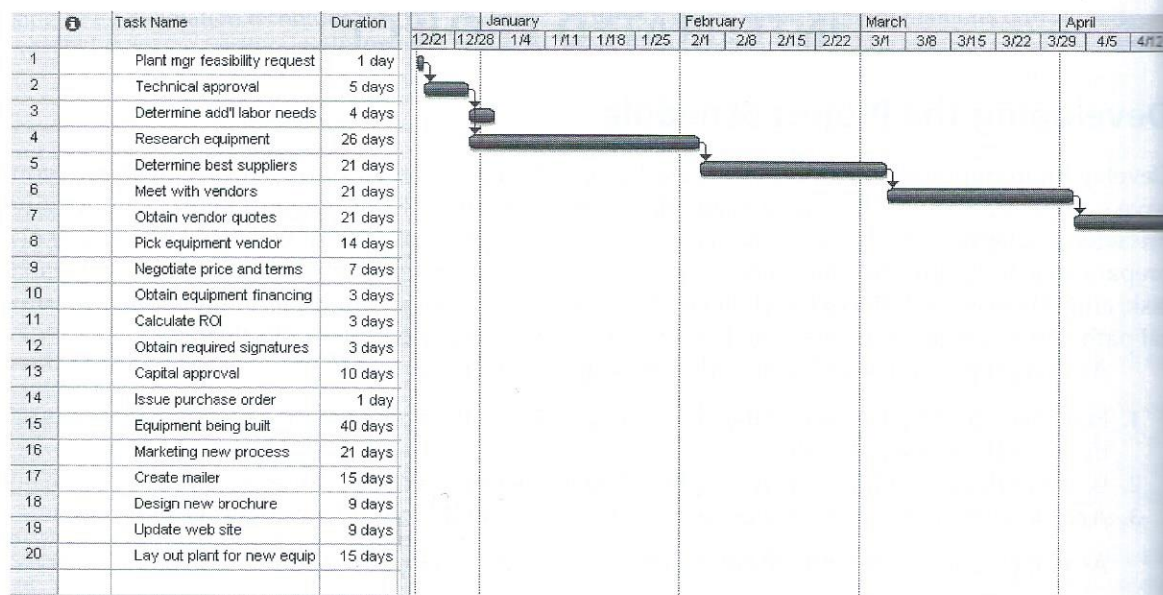


FIGURE 10.26 Partial Gantt Chart for ABCups, Inc. Project (Left Side)

Source: MS Project 2013, Microsoft Corporation.

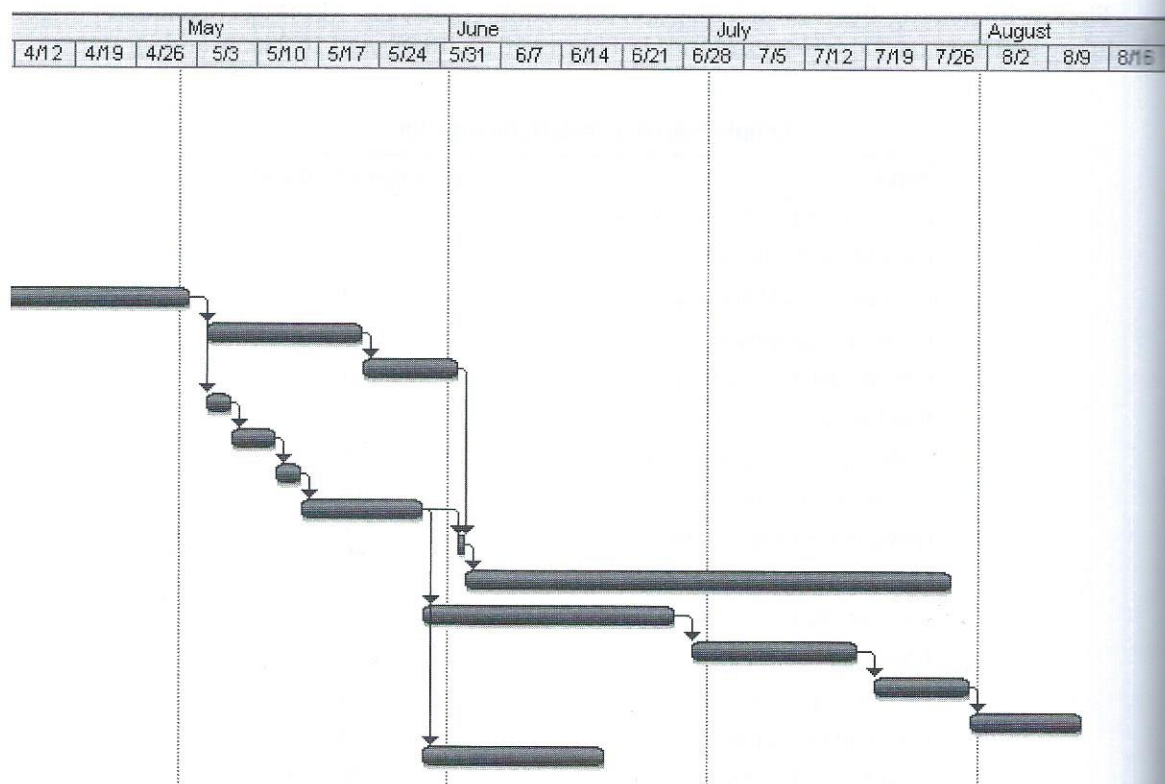


FIGURE 10.27 Partial Gantt Chart for ABCups, Inc. Project (Right Side)

Source: MS Project 2013, Microsoft Corporation.



FIGURE 10.28a Network Diagram for ABCups, Inc. Project (Left Side)

Source: MS Project 2013, Microsoft Corporation.

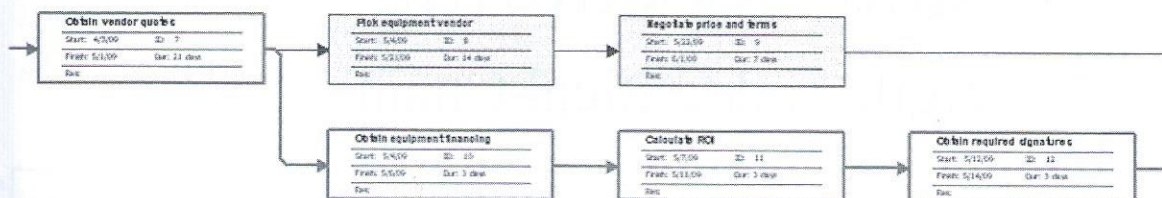


FIGURE 10.28b Network Diagram for ABCups, Inc. Project (Middle)

Source: MS Project 2013, Microsoft Corporation.

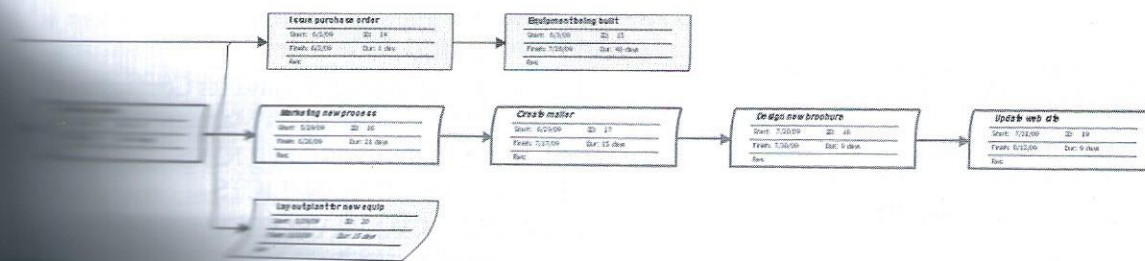


FIGURE 10.28c Network Diagram for ABCups, Inc. Project (Right Side)

Source: MS Project 2013, Microsoft Corporation.

Notes

1. Padgett, T. (2013, May 31). "Expanding the Panama Canal: The Problem Is Money, Not Mosquitoes," *NPR*. www.npr.org/blogs/parallels/2014/05/30/317360379/expanding-the-panama-canal-the-problem-is-money-not-mosquitoes; Faganson, Z., and Adams, D. (2014, July 14). "Panama Canal cost overrun claim headed to Miami arbitration court," *Reuters*. www.reuters.com/article/2014/07/14/us-usa-panamacanal-arbitration-idUSKBN0FJ1PA20140714; Johnston, K. (2014, March 16). "Panama Canal expansion to have major impact on Boston," *Boston Globe*. www.bostonglobe.com/business/2014/03/15/panama-canal-expansion-have-major-impact-boston-worldwide-shipping/lqz3i-ihcfpHWdTMS9ePDKO/story.html; U.S. Department of Transportation Maritime Administration. (2013). *Panama Canal Expansion Study*. www.marad.dot.gov/documents/Panama_Canal_Phase_I_Report_-_20Nov2013.pdf; Panama Canal Authority (2006). *Proposal for the Expansion of the Panama Canal*. www.acp.gob.pa/eng/plan/documentos/propuesta/acp-expansion-proposal.pdf.
2. Nicholas, J. M. (1990). *Managing Business & Engineering Projects*. Englewood Cliffs, NJ: Prentice-Hall; Hulett, D. (1995). "Project schedule risk assessment," *Project Management Journal*, 26(1): 23–44; Lock, D. (2000). *Project Management*, 7th ed. Aldershot: Gower; Oglesby, P., Parker, H., and Howell, G. (1989). *Productivity Improvement in Construction*. New York: McGraw-Hill.
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