

PERT requires comprehensive project planning. During the concept and definition phase of a project, project managers construct and consider many different project approaches using PERT as a basis for moving forward. As circumstances change or develop, the project may need to be adjusted to accomplish its objectives. PERT provides the tools to do this by stressing the interrelation of project activities. It further provides an explicit tool for measuring the time/cost tradeoff inherent in any large-scale project.

EXERCISES

- 12-1 Using the information in Table 12-7, construct a PERT network and answer each of the following questions:
- What is the expected project completion date?
 - What is the scheduled start and completion date for each activity?
 - Which activities are on the critical path?
 - How long can noncritical path activities be delayed without jeopardizing the overall completion date for this project?

- 12-2 Assess the impact of the following changes to the time estimates provided in question 12-1. Individually, what is the impact if:

Activity	Predecessor	New Time Estimate
O. Advertise for new staff	N	4
P. Interview for new staff	O	6
Q. Select new staff	P	1

Collectively, what is the impact of these changes?

- 12-3 As project manager for the example included in question 12-1, what would you recommend to preserve the original project completion date if activity A was reestimated to take 8 weeks, not the original 4 weeks? Provide details.

- 12-4 Develop a WBS and PERT network with no more than 20 activities for each of the following projects.
- Buying a car
 - Screening 1000 school-age children for high blood pressure and reporting the results to the child's physician

Table 12-7 Project to Convert a 20-Bed Unit in a Nursing Home to Accommodate Patients with Dementia

Activity	Predecessor	Time estimate (weeks)
A. Secure state approval	—	4
B. Identify 20-bed unit to be used	A	1
C. Move existing residents	B	1
D. Clean space	C	2
E. Develop architectural plans	A	9
F. Install new heating and ventilation systems	E	4
G. Install security systems	E	2
H. Move walls; renovate	F	4
I. Identify new equipment	A	1
J. Order new equipment	I	1
K. Unpack and inspect new equipment	J	1
L. Install new equipment	D, K, H	3
M. Reassign staff	A	1
N. Identify new staffing needs	M	1
O. Advertise for new staff	N	3
P. Interview for new staff	O	2
Q. Select new hires	P	3
R. Develop care plan protocols	M	1
S. Train staff	R, Q, M, L	1
T. Modify quality assurance plans	S	2
U. Coordinate with hospital discharge planners	T	4
V. Complete internal audit	U, G	1