

Instructor's Manual

to accompany

PROJECT MANAGEMENT

A SYSTEMS APPROACH TO PLANNING,
SCHEDULING, AND CONTROLLING

TWELFTH EDITION

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CHAPTER 1

1-1 There is no correct answer to this problem, just preferred choices.

1. a, b, c, d, f, g, i, k, m, n, p
2. b, d, e, h, i, j, k, m, n, o, p
3. a, c, d, f, g, i, j, m, n, p
4. b, d, e, h, i, j, k, m, n, o, p
5. b, d, h, i, l, m, n, p

Moral: Even in the best companies, differing views of project management are possible. Differing views also occur whether the company is project-driven or non-project-driven. Also, the views can change as the company gets reasonably more mature in project management.

1-2 Project management was originally designed for industries that have complex (as opposed to simple) tasks and that operate in an ever-changing, dynamic (as opposed to static) environment. These include aerospace, defense, construction, computers, high technology, electrical instrumentation, and the like. Companies that have highly repetitive tasks, such as low-technology manufacturing companies, do not need formal project management but can use informal project management for activities such as capital equipment projects. Furthermore, project management works best in situations where activities require the involvement of more than one functional group. Today, project management exists in almost all companies, and some firms believe that they are managing their business by projects.

1-3 In general, the most important attributes of a project manager are communicative skills and interpersonal skills. Individuals cannot be trained to be a project manager simply by taking courses or attending seminars. Project managers can only be developed by on-the-job training, especially under the guidance of an experienced project manager. Some companies prefer to train project managers by first rotating them through the various line organizations (say two weeks to two months each) and then assigning them as an assistant project manager. The question, of course, is how much they can learn in such a short period of time. Promoting from within is best because the first few project managers must know the total organization. If functional employees see promotions from within, then they feel that there are several career paths in the company. However, the new project managers must be able to divorce themselves from the functional organization. It is often best to hire from the outside so that you will have a project manager who does not have any functional ties and does not owe any favors.

1-4 Functional managers would prefer to manage projects which stay entirely

within their functional groups. This greatly reduces authority problems. Sometimes, however, the line manager may be asked to manage an entire project even though only 60% of the work stays within his/her group. This can work if the line manager has good interpersonal skills and must interface with only one or two other departments.

- 1-5** All three items are more important on the horizontal line than on the vertical line. Because the project manager is under a time constraint, time management is vital. Communications are important because the project manager may be working with functional employees that he/she has never worked with before. Motivation is important because the project manager must try to motivate functional employees without the leverage of controlling their salaries and pay raises.
- 1-6** In most organizations, power rests with the individuals who control the resources. If the project manager has to negotiate for all resources, and the resources are still attached administratively to the line manager, then project management may very well make line managers more powerful than before. Of course, senior management still retains the right to “glorify” the project management position. There are many forms of power and authority. Power and authority disputes can be easily resolved or even prevented if the functional managers understand project management and the role of the project manager.
- 1-7** In project-driven organizations, the fastest career path is in project management, with project engineering second and line management third. The major reason for this is because project management and project engineering may be viewed as having direct control and input to corporate profitability since each project has its own profit and loss statement. In non-project-driven organizations, where the profit is measured vertically, the career path opportunities are reversed.

CHAPTER 2

- 2-1** Systems managers are trained to make decisions for the best interest of an entire system. Project managers should think the same way but sometimes decisions are made that are not optimal decisions. Ideally, all decisions should be made by looking at the big picture.
- 2-2** (a) Open, closed, or extended
(b) Extended
(c) Closed
(d) Closed
(e) Closed
- 2-3** Organizational structures, which will be discussed in Chapter 3, focus on control of resources and also (hopefully) timely decision making. Therefore, we must consider the issues of whether the product is strategic or not strategic, how far the product is in the project life cycle, how many full time or part-time resources are needed, and what skills the resources need.
- 2-4** Projects require funding. There must be decision points in the development of any system to ascertain the program made, the funding needed to continue, and whether the expected benefits and accompanying value will be there. To do this, it is best to use life cycle phases.
- 2-5** People are accustomed to having some form of guidance when managing projects. The guidance comes in the form of a methodology. However, as project management matures, the methodology is replaced by a flexible framework in which the project team can decide whether the methodology should be used and how much of the methodology should be used. All of this is based upon how much trust the executives have in project management.
- 2-6** Project management methodologies should have no more than five or six life cycle phases. Too many phases create excessive paperwork and useless meetings. Usually senior management makes the final decision on the number of life cycle phases.
- 2-7** If a project does not produce the expected results, or even if the project were a total disaster, it could still be considered as a partial success if knowledge were gained that could be used on other downstream projects.
- 2-8** Project management can work successfully both formally or informally. But for informal project management to be successful, executives must have trust in project management. Therefore, executives may require that project management work formally first and see it in action before allowing informal project management to take place. Trust is the key element.