

## *Case 1*

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# *New Office Equipment*

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You are one of the first engineers hired into the manufacturing engineering department at a brand new facility for producing aircraft engine controls. Your department is responsible for selecting, justifying, and installing all equipment for the factory. Most of the production equipment is being transferred up from the old facility in Fairfield, about a 3-hour drive away. The first production line has just been installed, and 8 more will be implemented over the next few months. When fully operational, approximately 700 production personnel will be employed on the factory floor. Most of your time is being spent on the shop floor learning about the equipment and trying to help with the installation process.

Right now most of the office cubicles are empty, but more people are being hired and transferring in from the main plant every week. Around 100 support personnel in operations management, quality engineering, manufacturing engineering, computer information systems, finance, purchasing, and human resources will have cubicle offices in a very large open area. Managers of each of the departments have already arrived. A separate design engineering liaison office will have approximately 20 personnel. The plant manager has a separate office suite.

Since the manufacturing engineering department is responsible for selecting and justifying all new equipment, it is being tasked with selecting and justifying the copy machines for the new office. For the transition period, two small copiers were purchased, one for the plant manager's office and another for receiving inspection. A few small copy

machines were rented and placed around the office area, but now a decision must be made on equipment for full plant operation.

The manufacturing engineering manager has selected you for this project. In giving you this assignment, she tells you that she understands that it is not a very exciting piece of equipment for your first justification project. She explains that the task is a very important one, and it will give you the opportunity to meet personnel in all the other departments. It will also help you learn the steps of the machine selection and implementation process. The phone rings about then, and the manager is called to the shop floor to decide what to do with a machine that was damaged in transit. As she leaves, she asks you to start talking to people about their needs and to outline the steps you think would need to be taken to get this project done. She says she will review the outline with you tomorrow.

You should consider the following in preparing your outline:

1. How would you find out what the needs are for copy machines?
2. What are the project's objectives? Would different people in the office have different objectives? Are any of these objectives conflicting?
3. How can you find out what type of equipment is available and what it costs?
4. What additional considerations would you have to make in deciding on equipment and where to physically locate it?
5. How will you develop, evaluate, and compare alternatives?
6. Who do you think would have to approve your proposal?
7. How do you think an order would actually get placed for the equipment?
8. What steps might need to be taken before the equipment actually arrives to prepare for installation?
9. When should you follow-up to see that the equipment is meeting the needs?
10. How do the defined steps fit into the framework of the engineering design process? Where do the tools of an economic analysis fit in?