
CASE 8

QUESTION 1

Foss Mechanical

Foss Mechanical is producing advanced processed metal products. The company's financial status is good, its products are well-known for their quality and the company has an extensive list of customers. However, the board of the company is worried about the market development, which has resulted in tougher competition and smaller profit margins. To meet this situation, the board has decided to replace several of the production machines (e.g. milling machine, surface finishing machine), and also implement new production software. The arguments behind the machine and software replacement are:

- Some of the old production machines result in a high percentage of rejects or products with lower quality.
- Out-of-date production equipments have resulted in lower flexibility and utilization of capacity.
- Some customers have quality requirements that cannot be fulfilled by using the present machines.
- Better equipment and software are available in the market, and this can give the competitors a competitive advantage if Foss Mechanical is not starting their project as soon as possible.

The company's board has decided that Alfred, who is the manager of the production department, should be the project manager and responsible for the replacement of the machines and software. According to rumors, the CEO of the firm had suggested Stein, who is head of the IT department, as the new project manager.

Alfred's responsibility as the project manager includes the development of requirements, procurement, installation, training and start-up of both the new machines and the belonging software. The board has decided that the total budget for the project is 18 million NOK. The board has also clearly said that the project has to be finished within 18 weeks due to a contract with an important customer about delivering new metal components.

Alfred is aware of the project's importance for the firm. He himself wishes to work a lot with the project, but he is also the project manager for three other projects in addition to being the manager of the production department. He has also received a message from the board that the machine and software replacement must interfere with the daily production as little as possible, this implies that all contracts with customers must be produced and delivered as planned.

Both the board and the CEO want to undertake a detailed monitoring of the project. Alfred shall deliver detailed progress reports every week to both the chairman of the board and the CEO. The chairman and the CEO have also claimed that all plans have to be approved by them. At the same time, Alfred is confidentially informed that neither the chairman, nor the CEO, have time to participate in the planning and following-up processes of the project.

- a) Explain the difference between a project's goal and purpose. What is the goal and purpose for this project?
- b) Alfred has heard about a tool called "responsibility chart" and will try it out in the project. Develop an example of a responsibility chart for the project and explain what it is and how it can be used.
- c) Identify the project's stakeholders. Chose four (4) of these stakeholders and perform a stakeholder analysis of them. Discuss briefly why stakeholder management is important.
- d) Explain briefly the estimation technique used to develop the budget for this project. What are the strengths and weaknesses by using this budget estimation method?
- e) Identify four (4) uncertainties/risks in this project. Show how to use a risk map/matrix to analyze the three uncertainties/risks you have identified. What is the result of the risk analysis?
- f) Develop an illustration that shows the "project manager compass/the six lookings". Explain briefly how Alfred can use this model as a framework for the management of the project.
- g) It is now 10 weeks since the project started and Alfred is almost on the brink of collapse. Below are listed some general causes of project failure. Select and discuss two (2) causes you think are most important and relevant related to the case.
 - The top management does not understand how a project should be managed
 - Unclear goals
 - Unclear relations between the project and the line organization
 - The project manager has much responsibility, but low authority
 - Nobody is really responsible for the project
 - The project manager does not fit the role of project manager
 - The project has unrealistic plans and budgets
 - The project manager doesn't have the necessary influence on the project's plans
 - The project doesn't have the necessary resources
 - The firm is carrying out too many projects at the same time
 - Insufficient coordination between goals, plans, and following-up
 - The firm has unclear and shifting priorities
 - The project is not properly organized
 - Changes in scope are not followed-up as it should be
- h) Discuss what you think should be the success criteria for this project.

QUESTION 2

You are given the following project information.

Activity	Duration (weeks)	Predecessor	Can be reduced (weeks)	Additional cost per week
A	2	-	-	-
B	4	A	-	-
C	2	A	1	10 000
D	4	B	2	15 000
E	3	B	1	15 000
F	1	B, C	-	-
G	3	D, E	1	20 000
H	4	F	2	10 000
I	4	G, H	-	-

- a) Draw the network diagram. How long will it take to complete the project? Identify the critical activities and the critical line(s)/path(s). Explain what a critical line is? Which activities have slack (float) and how much. Explain what slack (float) is.
 - b) Develop a Gantt-chart for the project where the activities start at the Latest start. Mark the critical activities.
- a) The total duration of the project needs to be reduced (crashed) by three (3) weeks. Which activities will you reduce (crash)? Explain your answer. How much will this acceleration of the project cost as a minimum? After the acceleration of the project plan, what is critical line(s) and slack (float)?

QUESTION 3

A project consists of the following activities and the given budget:

	Week					
	1	2	3	4	5	6
Activity A	300	200	100			
Activity B		200	200			
Activity C			300	300		
Activity D			200	200	200	200
Activity E				400	400	
Activity F						100

- a) Summarize the total cost for each week and calculate accumulated cost. What is the total planned cost for this project (the budget)?
- b) The project is being cost controlled after 4 weeks. Then activity A and B are 100% completed, for activity C 25% work remains, activity D is 50% completed, and activity E is 25% completed. Actual cost is 2550.

- What is planned cost (PC) and earned value (EV) after 4 weeks?
 - Calculate cost variance (CV), budget variance and schedule variance.
 - What is CPI after 4 weeks?
 - Describe the project's situation so far?
 - Calculate new total cost (ECAC).
 - What must CPI be during the rest of the project to not exceed the original budget?
- c) A project team member has analyzed the project and argue that there is a chance that the project will be one week delayed. Do you agree?