
CASE 6

QUESTION 1

PAX is a thriving company specializing in the manufacture and distribution of technical products and transportation solutions for various industries. The foundation of the business lies in delivering intelligent and cost-effective solutions. Currently, PAX boasts a team of 55 employees and is situated just outside Oslo. In the previous year, the company achieved a turnover of approximately NOK 90 million.

Recently, the Oslo Traffic Administration unveiled a project that entails the provision of 200 electric vehicle charging stations within Oslo. The allocated budget for this contract is 5.2 million NOK. According to the stipulations set forth by the Oslo Traffic Administration, the delivery of these charging stations must be concluded by May 1st of the following year.

Historically, PAX has successfully undertaken multiple projects involving the installation of charging stations across Norway. The company has collaborated with the Swedish technology supplier SEC to develop a distinctive charging station tailored for electric cars. This model is not only user-friendly and modular, but also equipped to handle functions such as payment processing, data analysis, and updates to future charging capabilities. Users can conveniently manage the charging station through a dedicated mobile app. While the standard model accommodates two charging contacts, there is also an option available with four charging contacts. Boasting stainless steel construction and a contemporary design, these charging stations are poised for the urban environment of the future.

Steve, an integral member of PAX for the past five years, has primarily held technical roles. Though he has participated in various projects at PAX, he has not previously held managerial responsibilities. Following a recent meeting with his superior, Jill, Steve has been tasked with the role of project management for the company's newly secured project.

For this endeavor, a fresh project team has been assembled, comprising five members from PAX. Alongside Steve, Sara will serve as the assistant project manager, overseeing the relationship with SEC. Marco and Celene are onboard as technical specialists, while Marion assumes responsibility for administrative and legal matters. Steve is dedicated full-time to this project, whereas the others are part-time contributors due to their concurrent involvement in multiple projects.

- a) Use project management theory and discuss why this is a project.
- b) Discuss Steve's responsibilities as a project manager.
- c) When Steve starts working with his team, the members go through several stages as they change from being a collection of strangers to a united and effective group with common goals. Describe the different stages of a project team's development. What characterizes an effective project team?

- d) Describe what a milestone is. Develop a milestone plan consisting of five (5) milestones for this project. Develop a milestone responsibility matrix using the five milestones where you also explain and apply the most common types of responsibilities/roles.
- e) Steve will implement uncertainty (risk) management in his project. Describe briefly the several stages of the uncertainty (risk) management process. Identify four (4) uncertainties and perform an uncertainty (risk) analysis of these four uncertainties. Describe briefly the four general actions Steve can apply in response to the uncertainties.
- f) Discuss the success criteria that should be considered when evaluating the project after it is finished. Explain what benefits management is. What can be done to maximize the benefits from the project?

QUESTION 2

The following information is given about a project:

Activity	Pre-activity	Duration (days)	Resources/worker	Can be reduced by	Extra cost per day the activity is reduced
A	None	4	Anna	2 days	10 000
B	None	5	Peter	2 days	10 000
C	A, B	3	Anna	1 day	5 000
D	B	2	Peter	1 day	5 000
E	B	1	Fred	-	
F	C, D	4	Anna	1 day	5 000
G	D, E	6	Fred	3 days	5 000

Extra information: Activity C can start 3 days after activity A is finished.

- a) Develop a network (plan) for the project. When is the project finished, what is the critical line (path) and slack?
- b) Create a Gantt-diagram for the project assuming that each activity starts as late as possible. Mark the critical activities.
- c) The client wishes to reduce (crash) the total project duration by three (3) days. What are the minimum costs? Find critical path(s) and activities with slack.
- d) Disregard the information in question c). After 5 days Peter gets ill and cannot continue his work in the project. Both Fred and Anna argue that they are competent and can do Peter's work. What are the consequences regarding project duration, critical activities and slack:
 1. If Fred does Peter's work.
 2. If Anna does Peter's work.

QUESTION 3

A project consists of activity 1-4 and is given the following budget and schedule (assume that costs are linear for each activity).

	Budget	Week							
		1	2	3	4	5	6	7	8
Activity 1	300	■	■	■	■				
Activity 2	400			■	■	■			
Activity 3	600				■	■	■		
Activity 4	300						■	■	■

- Summarize the total costs for each week and calculate the accumulated cost. What is the total planned costs for this project (the budget)?
- The project is cost-controlled after 4 weeks. Then activity 1 is 100% completed, activity 2 is 75% completed and 1/3 of activity 3 is done. Actual costs are 900. What are PC, AC and EV after 4 weeks? Calculate CV, BV, and SV. Describe the project's status after 4 weeks.
- How much work remains after 4 weeks? Calculate CPI, SPI, and new ECAC and ETAC. What is the crucial assumption this calculation of new total cost and duration is based on?