# MBA5020: 專案管理

## 第二次小考試題卷

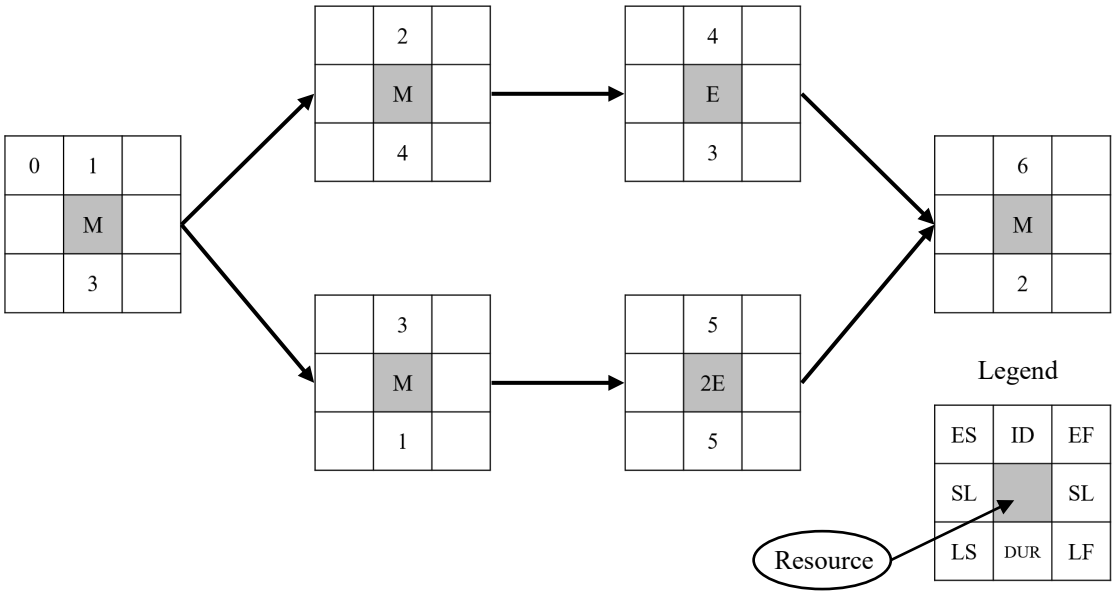
1. The project information for the custom order project of the DW Company is presented here. You have signed a contract to complete the project for the DW Company. You will receive a $1000 bonus for completing the project within 30 working days. The contract also contains a penalty clause in which you will lose $100 for each day the project takes longer than 30 working days.

   (1) Draw a project network given the information below.
   (2) Complete the forward and backward pass, compute the activity slack, and identify the critical path.
   (3) Do you expect to receive a bonus or a penalty on this project?

   (4) How does the WBS differ from the project network? Why bother creating a WBS? Why not go straight to a project network and forget the WBS?

| ID | Description | Predecessor | Time |
|---|---|---|---|
| A | Order review | None | 2 |
| B | Order standard parts | A | 3 |
| C | Produce standard parts | A | 10 |
| D | Design custom parts | A | 13 |
| E | Software development | A | 18 |
| F | Manufacture custom hardware | C, D | 15 |
| G | Assemble | B, F | 10 |
| H | Test | E, G | 5 |

2. Given the network plan that follows:




(1) Complete the early, late, and slack times in the project network.

(2) Assume only one Manager is available and two Employees are available. Given your resource schedule, compute the early, late, and slack times for your project in the table below. Which activities are now critical? What is the project duration now?

| ID | RES | DUR | ES | LF | SL | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | 3 | | | | | | | | | | | | | | | | | | |
| 2 | M | 4 | | | | | | | | | | | | | | | | | | |
| 3 | M | 1 | | | | | | | | | | | | | | | | | | |
| 4 | E | 3 | | | | | | | | | | | | | | | | | | |
| 5 | 2E | 5 | | | | | | | | | | | | | | | | | | |
| 6 | M | 2 | | | | | | | | | | | | | | | | | | |
| Total resource load | | | | | | | | | | | | | | | | | | | | |
| Resource available | | | | | | | | | | | | | | | | | | | | |

3. You are a member of the National Taiwan University (NTU) student body entertainment committee. Your committee has agreed to sponsor a winter concert in 2020. The motive behind this concert is to offer a safe alternative to Christmas Weekend. Christmas Weekend is a winter event in which students from NTU rent KTV equipment and engage in heavy partying. Traditionally this occurs during the second weekend in December. Unfortunately, the partying has a long history of getting out of hand, sometimes leading to fatal accidents. After one such tragedy recently, your committee wants to offer a safety experience for those who are eager to celebrate the new year and the pending end of the school year.

   You have just finished a preliminary scope statement for the project (see below). You are now brainstorming potential risks associated with the project.

   (1) Identify potential risks associated with this project. Try to come up with at least five different risks.

   (2) Use a risk assessment form to analyze identified risks.

   (3) Develop a risk response matrix to outline how you would deal with each of the risks.

## PROJECT SCOPE STATEMENT

### PROJECT OBJECTIVE

To organize and deliver a four-hour concert at NTU Stadium at a cost not to exceed 1,000,000 NTD on the second Saturday in December.

### DELIVERABLES

- Concert security.
- Four hours of music and entertainment.
- Food venues.
- Souvenir concert T-shirts.
- Secure all licenses and approvals.
- Secure sponsors.

### MILESTONES

1. Secure all permissions and approvals by July 15.
2. Sign big-name singer by August 15.
3. Complete artist roster by September 1.
4. Secure vendor contracts by October 15.
5. Setup completed on December 11.
6. Concert on December 12.
7. Cleanup completed by December 16.

### TECHNICAL REQUIREMENTS

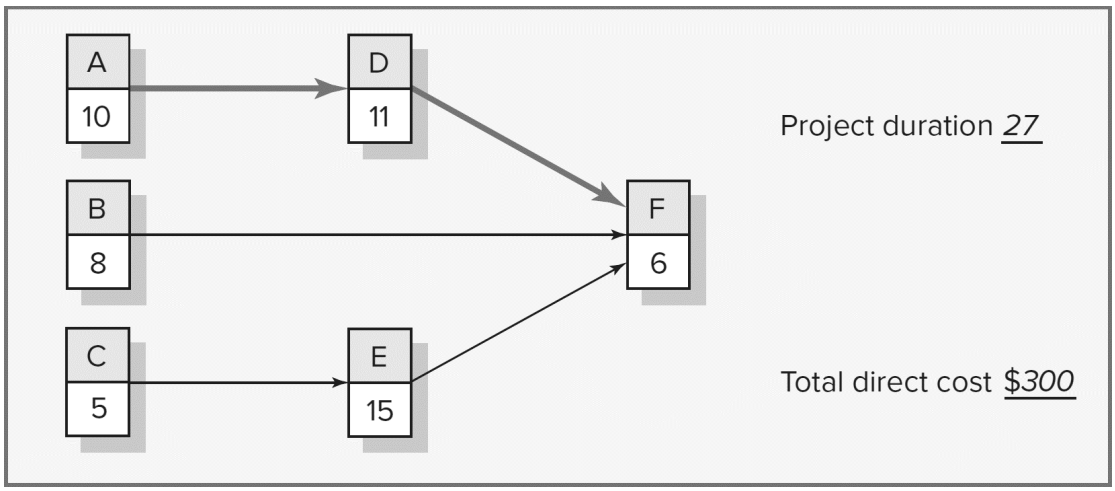
1. Professional sound stage and system.
2. At least one big-name singer.
3. Compliance with NTU and city requirements/ordinances.

### LIMITS AND EXCLUSIONS

1. The singer responsible for travel arrangements to and from NTU.
2. Vendors contribute a set percentage of sales.
3. Concert must be over by 10:00 p.m.

4. If the indirect costs for each duration are \$300 for 27 days, \$240 for 26 days, \$180 for 25 days, \$120 for 24 days, \$60 for 23 days, and \$50 for 22 days, compute the direct, indirect, and total costs for each duration. What is the optimum cost-time schedule? The customer offers you \$10 for every day you shorten the project from your original network. Would you take it? If so for how many days?

| Act. | Crash Cost (Slope) | Maximum Crash Time | Normal Time | Normal Cost |
|---|---|---|---|---|
| A | 80 | 2 | 10 | 40 |
| B | 30 | 3 | 8 | 10 |
| C | 40 | 1 | 5 | 80 |
| D | 50 | 2 | 11 | 50 |
| E | 100 | 4 | 15 | 100 |
| F | 30 | 1 | 6 | 20 |



5. Alpha Project

William was taking his dog Callie on her evening walk as the sun began to set over the coastal range. He looked forward to this time of the day. It was an opportunity to enjoy some peace and quiet. It was also a time to review events on the Alpha project and plot his next moves.

William became a project manager for the money. He also thought he was good at it. He enjoyed working with people and making the right things happen. This was his fifth project and up to now he was batting .500, with half of his projects coming ahead of schedule. William was proud that he could now afford to send his oldest child to Stanford University.

William had two major concerns when he started the Alpha project. The first was the technical risks inherent in the project. In theory the design principles made sense and the project used proven technology. Still the technology had never been applied in the field in this matter. From past experience, William knew there was a big difference between the laboratory and the real world. He also knew that integrating the audio, optical, tactile, and laser subsystems would test the patience and ingenuity of his team.

The second concern involved his team. The team was pretty much split down the middle between hardware and electrical engineers. Not only did these engineers have different skill sets and tend to look at problems differently, but generational differences between the two groups were evident as well. The hardware engineers were almost all former military, family men with conservative attire and beliefs. The electrical engineers were a much motlier crew. They tended to be young, single, and at times very cocky. While the hardware engineers talked about the Seattle Mariners, raising teenagers, and going to Palm Desert to play golf, the software engineers talked about Vapor, the latest concert at the Gorge amphitheater, and going mountain biking in Peru.

To make matters worse, tension between these two groups within CEBEX festered around salary issues. Electrical engineers were at a premium, and the hardware engineers resented the new hires' salary packages, which were comparable to what they were earning after 20 years of working for CEBEX. Still the real money was to be made from the incentives associated with project performance. These were all contingent on meeting project milestones and the final completion date.

Before actual work started on the project, William arranged a two-day team-building retreat at a lodge on the Olympic peninsula for his entire team as well

as key staff from the government installation. He used this time to go over the major objectives of the project and unveil the basic project plan. An internal consultant facilitated several team-building activities that made light of cross-generational issues. William felt a real sense of camaraderie within the team.

The good feelings generated from the retreat carried over to the beginning of the project. The entire team bought into the mission of the project and technical challenges it represented. Hardware and electrical engineers worked side by side to solve problems and build subsystems.

The project plan was built around a series of five tests, with each test being a more rigorous verification of total system performance. Passing each test represented a key milestone for the project. The team was excited about conducting the first Alpha test one week early—only to be disappointed by a series of minor technical glitches that took two weeks of problem solving to resolve. The team worked extra hard to make up for the lost time. William was proud of the team and how hard members had worked together.

The Alpha II test was conducted on schedule, but once again the system failed to perform. This time three weeks of debugging was needed before the team received the green light to move to the next phase of the project. By this time, team goodwill had been tested, and emotions were a bit frayed. A cloud of disappointment descended over the team as hopes of bonuses disappeared with the project falling further behind schedule. This was augmented by cynics who felt that the original schedule was unfair and the deadlines were impossible to begin with.

William responded by starting each day with a status meeting where the team reviewed what they accomplished the previous day and set new objectives for that day. He believed these meetings were helpful in establishing positive momentum and reinforcing a team identity among the engineers. He also went out of his way to spend more time with the “troops,” helping them solve problems, offering encouragement, and a sincere pat on the back when one was deserved.

He was cautiously optimistic when the time came to conduct the Alpha III test. It was the end of the day when the switch was turned on, but nothing happened. Within minutes the entire team heard the news. Screams could be heard down the hallway. Perhaps the most telling moment was when William looked down at the company’s parking lot and saw most of his project team walking by themselves to their cars.

As his dog Callie chased some wild bunnies, William pondered what he should do next.

1. How effective has William been as a project manager? Please **briefly** explain.
2. What problem(s) does William face? **Briefly** explain.
3. How would you go about solving them? **Briefly** explain Why?