**PMP Tutorial – Ethics**

# Case Study 1: Challenger Space Shuttle

At sunrise on January 28th 1986, it was clear but very cold in Cape Canaveral – more like New Hampshire, where Christa McAuliffe was a high school teacher, than Florida. Curtains of ice greeted the ground crews as they inspected the support structures for Flight 51-L, the space shuttle Challenger. The temperature had plunged overnight to a record low of minus four degrees Celsius. The ice team removed as much as they could, and temperatures gradually warmed over the course of the morning. But it was still brisk at 8.30 am, and Challenger’s crew of seven astronauts noted the ice around them as they climbed into the shuttle. As McAuliffe, the first teacher in space, entered the ship, a NASA technician offered her an apple. She held the apple and beamed, then asked the technician to save it for her until she returned. At 11.38 am, Challenger lifted off. One minute later, there was a massive explosion in the booster rockets. Millions watched their television screens in horror as the shuttle and its crew was destroyed.

On the eve of the launch, an emergency teleconference had been called between NASA and the Thiokol Corporation, the contractor that provided solid rocket motors for the shuttle. At the teleconference, a group of Thiokol engineers had pleaded with their superiors and with NASA to delay the launch. They feared that the unusually cold temperatures could cause a failure in synthetic O-rings that sealed the joints in the rocket motor. If the rings failed, the motor could blow up. The engineers recommended strongly that NASA wait for warmer weather. But Thiokol and NASA both faced strong pressures to get the shuttle in the air.

Thiokol had gained the lucrative sole source contract for the solid rocket boosters thirteen years earlier, during a bitterly disputed award process that veteran observers have characterised as a low point in squalid political intrigue. At the time of the award to the then relatively small Thiokol Chemical Company in Brigham City, Utah, both the newly appointed chairman of the Senate Aeronautics and Space Science Committee and the new head NASA administrator, were insiders in the tightly knit Utah political hierarchy. By summer 1985, however, Thiokol’s monopoly position was under attack and the corporation’s executives were afraid to risk their billion-dollar contract by halting shuttle operations long enough to correct the faulty booster joint design.

Meanwhile, managers at NASA were experiencing pressures of their own. As part of their effort to build congressional support for the space program, NASA had promised that the shuttle would eventually pay for itself in cargo fees, like a boxcar in space. The projections of profitability were based on a very ambitious program: twelve flights in 1984, fourteen in 1985, and seventeen in 1986. In practice, NASA had fallen well behind schedule, with only five launches in 1984 and eight in 1985.

The promise of “routine access to space” and flights that would eventually pay for themselves looked more and more dubious. With every flight costing the taxpayers about $100 million, NASA needed a lot of money from Congress, but the prospects were getting bleaker. NASA’s credibility was eroding while the US budget deficit was growing.

That was the context in which Thiokol’s engineers recommended cancelling the next day’s launch. The response from NASA officials was swift and pointed. One NASA manger said he was “appalled” at the recommendation and another said, “My god, Thiokol, when do you want me to launch? Next April?”

Thiokol asked for time to caucus. Thiokol’s senior managers huddled and then decided, against the advice of their engineers, to recommend the launch. NASA accepted the recommendation and launched Flight 51-L the next morning. The O-rings failed almost immediately, and the flight was doomed.

# Group Work

Consider the case study above and provide answers to the following:

* Identify the Stakeholders involved and their points of view toward launching the space shuttle Challenger?

NASA, Thiokol Corporation

* As an informed outsider list two points for launching the Challenger and two points against launching the Challenger?
* What responsibility did each party (or stakeholder) have in relation to the shuttle launch? (Justify your answer)
* Who do you think is ultimately responsible and why?
* Could anyone have done something to stop it?
* If the Challenger had not exploded was the decision to launch correct given that the shuttle crew was made up of both professional astronauts and civilian crew?

## Case Study 2: Software Bugs

An Australian software development company, Easysoft, has just produced a new software package that incorporates the latest tax laws and works out taxes for both individuals and small businesses. The manager of the company, Nobuko, knows that the program probably has a number of bugs. She also believes that the first firm to put this kind of software on the market is likely to capture the largest market share. Easysoft widely advertises the program. When the company actually ships a disk, it includes a disclaimer of responsibility for errors resulting from use of the program. The company expects it will receive a certain number of complaints, queries, and suggestions for modification. Easysoft plans to use these to make changes and eventually issue updated, improved, and debugged versions. Nobuko argues that this is general industry policy and that anyone who buys version 1.0 of a program knows this and will take proper precautions. Because of bugs, a number of users filed incorrect tax returns and were penalized by the Australian Taxation Office.

# Group Work

1. Is there an ethics issue involved? Were Nobuko’s actions unethical or not unethical?

*Answer this question using the 13 Questions approach (attached).*

Did the following actions affect your decision in deciding whether it was ethical or not: § Marketing product with a disclaimer of responsibility; § Arguing that her action is general industry policy.

It’s unethical. But it is legal because of the disclaimer of responsibility. About this situation, I will be afraid to use this software to file incorrect tax returns and be penalized. My conscience will bother me. Software produces results that violate tax laws. The proposed action doesn't consistent with past practice. I would feel shamed if details of this situation appeared on the front page of your local newspaper. This situation require me to lie about the outcome. I think this is an "extraordinary" situation that requires an unusual response. It’s unfair, I would not like to be treated like this. I can’t discuss the proposed situation with your immediate supervisor. I don’t tell my friends and family. If a good friend of mine took this action I will tell them don’t do this. I have to keep my actions secret

1. How do you decide what is right and wrong in a given situation?

By using the 13 questions approach.

## Case Study 3: DeLuna Distribution

You are employed by third-party Excelsior Consultants as a project manager. Four weeks ago your Director of Consulting appointed you to take over the development of a new automated Warehouse Management System for a long term client, DeLuna Distribution Pty Ltd, replacing the previous project manager, who resigned 3 months after getting it underway. Your team is 19 strong - a mix of mainly Excelsior staff supplemented by some DeLuna employees in support and testing roles, plus an external part-time subject-matter expert to provide specialist advice on warehouse operations.

Having now had sufficient time to settle into your new position you realise that this endeavour shows all the signs of being a ’runaway’ project – phase deadlines are often missed, the team is not motivated and the $1,300,000 budget meant to last for a full year is nearly 55% expended less than a third of the way though that timeline. Deeper investigation reveals that the independent business re-engineering expert, sourced for the project by the Excelsior Consulting Director (your boss), to redesign the physical operation of the DeLuna Distribution warehouse is a major cause. He has repeatedly coerced individual members of the project team to accept change requests to accommodate his new processes - processes which reveal a worrying lack of understanding of both information systems and warehouse operations. In addition, you discover that this external consultant, who has been charging exorbitant fees to the project budget, is in fact your Director’s brother-in-law.

Upon taking your concerns to your Director at Excelsior with a recommendation to approach DeLuna to halt the project while an internal project audit is conducted you are instructed not to do this. Your Director tells you that such action could seriously affect the relationship between Excelsior and DeLuna Distribution - potentially resulting in substantial damage to Excelsior’s income and reputation as a software consulting organisation. It could also prompt job losses for selected Excelsior employees. Instead, you are informed in confidence that DeLuna Distribution is about to buy a smaller rival company that will require integration of the two firms existing warehouses into a single joint operation. Rather than halting the project, this is alternatively an ideal time to request a substantial budget increase for the Warehouse Automation project - incidentally concealing any previous ‘misunderstandings’ promoted by the external warehousing ‘expert’. You are now to prepare a proposal for submission to DeLuna Distribution senior management recommending extending the current project – and attaching enough budget contingency to finance all the previous scoping problems (which DeLuna Distribution ‘don’t really need to know about’) as well as the new work. Given the high degree of confidence that the DeLuna Distribution CIO has expressed regarding your experience as a project manager and in light of the imminent company merger it is likely the DeLuna Project Steering Committee will approve this significant budget increase with minimal investigation.

# Group Work

Identify the ethical dilemma(s) involved in the situation outlined above. Based on your own ethical analysis if you were the project manager what actions, if any, would you take in regards to the above scenario? Provide a clear explanation and rationale for your decisions.

In this case, the supervisor took advantage of his position to provide improper benefits to his brother-in-law and to the detriment of Excelsior employees and DeLuna Distribution. This behavior violates the golden rule. I will report the supervisor's behavior to the top management of Excelsior and relevant departments, and resolve the matter without affecting Excelsior's reputation and relationship with DeLuna Distribution as much as possible.

# Approaches to Solving Ethical Dilemmas

## 13 Questions to Ask When Considering Potentially Unethical Actions

1. Is the situation legal?
2. How do you *feel* about the situation? Are you feeling unusually anxious? Are you feeling fearful?
3. Does your conscience bother you?
4. Will any rules, policies or regulations be violated?
5. Is the proposed action consistent with past practice?
6. How would you feel if the details of this situation appeared on the front page of the local newspaper?
7. Does this situation require that you lie about the process or the results?
8. Do you consider this to be an ‘extraordinary’ situation that demands an unusual response?
9. Are you acting fairly? Would you want to be treated this way?
10. Would you be able to discuss the proposed situation with your immediate supervisor? The head of your organization? The organization’s clients?
11. Would you tell a friend? Your family?
12. If a close friend of yours took this action, how would you feel?
13. Will you have to hide or keep your actions secret? Has someone warned you not to disclose your actions to anyone?

If in doubt, ask for advice. Another person’s point of view is often missing when unethical actions occur. By getting another perspective before acting, you can shed new light on the situation.

## Seven Step Approach to Tackle Ethical Issues (Reynolds (2003) pp 15-19)

1. Get the facts
2. Identify the stakeholders and their position
3. Consider the consequences of your decision
4. Weigh-up various guidelines and principles
5. Develop and evaluate options
6. Review your decision
7. Evaluate the results of your decision

## The Four Step Approach to Analyzing an Ethical Situation

### Step 1: Analyze the Facts of the Situation

1. What are the relevant facts?
2. Who are the stakeholders – i.e., who has an interest or stake in the outcome?
3. Examine the effects: who benefits? Who is harmed?

### Step 2: Isolate the Ethical and Legal Issues

1. Examine the legal issues: is anyone acting illegally?
2. Consult any official guidelines:
   1. Does the organisation have policies which apply to this situation?
   2. Does the Australian Computer Society Code of Ethics apply?

1. Examine ethical possibilities:
   1. Does the action violate the Golden Rule (that you should treat others as you expect them to treat you)?
   2. What are the duties and professional responsibilities of those involved? iii) What are the rights of those involved? iv) Are those involved following their own self-interest?
   3. Are they following a utilitarian approach or instead a principled approach?
   4. What decision would be consistent with past conduct? vii) What decision maintains retention of self-respect and the respect of others?

### Step 3: Decide on Steps to Resolve the Current Situation

1. What are your options?
2. Which option(s) would you recommend?
3. Defend the legality and ethicality of your preferred option.
4. How would you implement this?

### Step 4: Prepare Policies and Strategies to Prevent Recurrence

1. What organizational, technological, political, legal, or societal changes are needed?
2. What are the consequences of your suggested changes?

i) What will be the benefits to the organization? Are they marketable? Do they further public relations? ii) What will be the costs to the organization? iii) Who benefits? iv) Who is harmed?

* 1. What obstacles might prevent your plan from working?
  2. Do the changes support human rights and reflect common responsibilities?