Engineering Ethics

Lecture – 10: Whistle blowing

Conflicts between Engineers & Managers

1. Most engineers want to be loyal employees who are concerned about the financial well-being of their firms and who carry out instructions from their superiors without protest.

   At the same time, as engineers they are also obligated to hold paramount the health, safety, and welfare of the public.

   This obligation requires engineers to insist on high standards of quality and (especially) safety.

Many managers are not engineers and do not have engineering expertise, so communication is often difficult.

Engineers sometimes complain that they have to use oversimplified language in explaining technical matters to managers and that their managers do not really understand the engineering issues.

3. Many engineers who are not managers aspire to the management role in the future, where the financial rewards and prestige are perceived to be greater.

Thus, many engineers who do not yet occupy the dual roles of engineer and manager probably expect to do so at some time in their careers.

This conflict can be internalized within the same person because many engineers have roles as both engineers and managers.

Example (Conflicts between Engineers & Managers)

- Joe Wilson, who was an engineer found a problem with a crane that he believed involved public health and safety.

- Wilson wrote a memo to his boss, who replied that he did not need such a memo from Wilson and that the memo was not constructive.

- After Wilson was fired and went public, a New York Times investigation cited a corporate official’s comment that Wilson was someone who ‘‘was not a team player.’’

Being Morally Responsible in an Organization without Getting Hurt

Importance of Organizational Culture

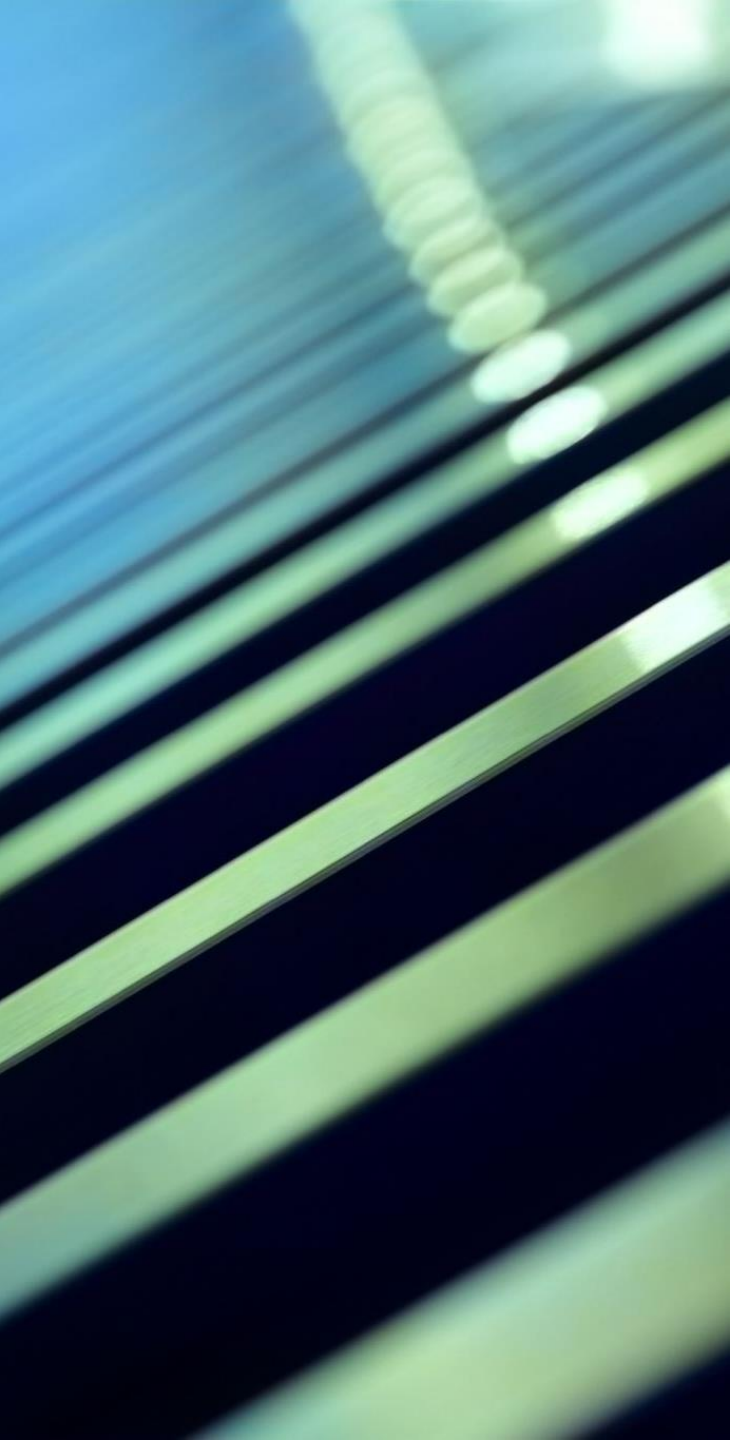
- In order to be morally responsible in an organization without suffering the fate of the employees, engineers must first have some understanding of the organization in which they are employed.

Three Types of Organizational Culture

Engineer-Oriented Companies: decisions are made taking into consideration internal engineering standards.

These companies stress on the safety and quality of their designs.

Example: such a company is likely to invest in an expensive part of a machine in order to meet its internal quality standards.



1. *Engineer-Oriented Companies (Contd.)*

Engineers often say that managers would rarely overrule them when there is a significant engineering issue, although they might make the final decision when primarily such issues as cost or marketing are involved.

Managers in such companies say that they never withhold information from engineers, although they suspect engineers sometimes withhold information in order to cover up a mistake.

2. Customer – Oriented Companies

- In customer-oriented company, the customer’s requirement is the primary focus and so there is an external standard of quality control, i.e., the willingness of the customer to purchase an item.
- Since the managers in such companies will try to satisfy the customers by providing them with cost-effective solutions, the engineer’s opinion regarding quality is likely to come in conflict with the manager’s decision.

3. Finance-Oriented Companies

- These firms are more focused on gross profits and returns on investment rather than quality control or customer satisfaction.

Proper Engineering & Management Decisions

- ***Concept of PED and PMD:***

- ***PED:*** a decision that should be made by engineers or at least governed by professional engineering standards because it either

  (1) involves technical matters that require engineering expertise or

  (2) falls within the ethical standards embodied in engineering codes, especially those that require engineers to protect the health and safety of the public.

- ***PMD:*** a decision that should be made by managers or at least governed by management considerations because

(1) it involves factors relating to the well-being of the organization, such as cost, scheduling, and marketing, and employee morale or welfare; and

(2) the decision does not force engineers (or other professionals) to make unacceptable compromises with their own technical or ethical standards.

- In some situations, engineers find the actions of the employer to be so objectionable that they believe non-participation in the objectionable activity is insufficient.

- Rather, some form of protest, or “whistle blowing,” is required.

Whistle Blowing

- ***Whistle blower:*** *"one who reveals wrongdoing within an organization to the public or to those in positions of authority."*

Characteristics of Whistle Blowing

Two characteristics of whistle blowing:

One reveals information that the organization does not want revealed to the public or some authority, and

One does this out of approved channels.

Internal VS External Whistle Blowing

Internal Whistle Blowing: the alarm about wrongdoing stays within the organization, although the whistleblower may bypass his immediate superiors, especially if they are involved in the wrongdoing.

External Whistle Blowing: the whistleblower goes outside the organization, alerting a regulatory organization or the press.

Open VS Anonymous Whistle Blowing

Open Whistle Blowing: In open whistle blowing, the whistleblower reveals his identity, whereas in

Anonymous Whistle Blowing: the whistleblower attempts to keep his identity secret.

- Whether internal or external, open or anonymous, however, a whistleblower is usually defined as a person who is an insider, one who is a part of the organization.
- For this reason, the question of loyalty always arises.
- A whistleblower’s actions are acts of disloyalty to his or her organization.
- Therefore, whistle blowing needs a justification.

Whistle Blowing: A Harm – Preventing Justification

Richard DeGeorge has provided a set of criteria that must be satisfied before whistle blowing can be morally justified.

DeGeorge believes that whistle blowing is morally permissible if:

the harm that "will be done by the product to the public is serious and considerable"

the employees report their concern to their superiors, and;

“getting no satisfaction from their immediate superiors, they exhaust the channels available” within the organization.

- DeGeorge believes that whistle blowing is morally obligatory if:

1. the employee has “documented evidence that would convince a responsible, impartial observer that his view of the situation is correct, and the company policy is wrong”; and

2. the employee has “strong evidence that making the information public will in fact prevent the threatened serious harm.”

Environmental Ethics

What is Environmental Ethics

Human life is possible because of the greenhouse effect, in which atmospheric gases such as water vapor and carbon dioxide block solar energy from escaping, after being reflected from the earth’s surface.

In 1988, however, NASA scientist James Hansen warned that the greenhouse effect is accelerating owing to human burning of fossil fuels that increase levels of greenhouse gases such as carbon dioxide (CO2).

- The change is small, but even a few degrees of global warming could melt enough of the polar ice caps to raise the oceans enough to cause severe flood damage.

- Other effects include major disruptions in weather patterns, such as increased drought, major shifts in rain patterns, and increased severity of hurricanes caused by rising ocean temperatures.

- In addition to global warming, environmental challenges confront us at every turn, including numerous forms of pollution, human-population growth, extinction of species, destruction of ecosystems, depletion of natural resources, and nuclear waste.

- For their part, many engineers are now showing leadership in advancing ecological awareness.

- In this chapter, we discuss some ways in which this responsibility for the environment is shared by engineers, industry, government, and the public.

The Invisible Hands and the Commons

- Two powerful metaphors have dominated thinking about the environment: the invisible hand and the tragedy of the commons.

- Both metaphors are used to highlight unintentional impacts of the marketplace on the environment, but one is optimistic, and the other is cautionary about those impacts.

- Adam Smith conceived of an invisible (and divine) hand governing the marketplace in a seemingly paradoxical manner.

- According to Smith, businesspersons think only of their own self-interest.

- In fact, professionals and many businesspersons do profess to “trade for the public good,” claiming a commitment to hold paramount the safety, health, and welfare of the public.

- Although they are predominantly motivated by self-interest, they also have genuine moral concern for others.

- By pursuing self-interest, the businessperson, as entrepreneur, creates new companies that provide goods and services for consumers.

- Moreover, competition pressures corporations to continually improve the quality of their products and to lower prices, again benefiting consumers.

- In addition, new jobs are created for employees and suppliers, and the wealth generated benefits the wider community.

- Regarding the environment, most of these are negative externalities—pollution, destruction of natural habitats, depletion of shared resources, and other unintended and often unappreciated damage to “common” resources.