

## **Professional As Manager, Consultant And Leader**

Engineering and Society

At the end of this module, you should be able to

- Understand engineer's roles as manager
- Identify professional responsibilities as consultant
- Discuss the roles of engineer as advisor and expert witness
- Understand the social obligation of professional engineers as ethical leaders in the society

## MANAGERS

- Primary function is to direct activities of the organization
- Are "custodians" / guardian or caretaker of the organization
- Concerned with present and future well-being of the organization**
  - economic terms
  - public image
  - employee morale

## Engineers as Managers

- Engineers often rise to management positions – usually supervising other engineers as part of career advancement
- Managerial positions offer higher incentives, responsibilities, accountabilities and power*
- Managers are more highly regarded compared to engineers*

### Engineers as Managers

- The change of job scope requires a lot of adjustment.
- Engineers must equip themselves with managerial skills such as finance and leadership.
- As engineers climb up the career ladder, technical skills become less important while interpersonal skills become more important.

### DECISIONS

- In engineering, as well as other activities, there is a distinction between the types of decisions to be made.
  - \* proper engineering decision (PED)
  - \* proper management decision (PMD)

## PROPER ENGINEERING DECISION

□ A decision that should be made by engineers or governed by engineering principles:

- involves **technical matters** requiring **engineering expertise**
- falls **within the ethical standards** embodied in the engineering codes

## PROPER MANAGEMENT DECISION

□ A decision that should be made by managers or governed by management considerations:

- involves factors relating to the **well-being of the organization**
- *does not force engineers to make unacceptable compromises with their technical practices or ethical standards*

## Engineers as Managers

- Two major responsibilities of engineer-manager are as follows;
- Creating an ethical climate
- Managing conflict

## Creating an Ethical Environment

- To create an ethical environment, there are four criteria to be fulfilled;
  - Ethical values in their full complexity are widely acknowledged and appreciated by managers and employees alike.
  - The sincere use of ethical language has to be recognized as a legitimate part of corporate dialogue.
  - The top level management must establish a moral tone in words, in policies, by personal example etc.
  - The management has to establish some procedures for resolving conflicts.

## Conflict Management

- Unresolved and unmanageable **conflict** in organization will *reduce productivity and effectiveness*.
- Manager need to **resolve and stop conflict** from affecting the *organizational performance*.

## Conflict Management

- What are the important forms of Conflicts?
  - Conflicts based on *schedules*
  - Conflicts which arises in evolving the *importance of projects and the department*.
  - Conflicts based on the *availability of personal for a project*.
  - Conflicts over *technical matters*.
  - Conflicts arise due to *administrative procedure*.
  - Conflicts of *personality*
  - Conflicts over *cost or expenditure or money*

## Conflict Management

### □ The Principles of Conflicts Management

- Separate people from the problem.
- Focus on interest and not on positions.
- Generate a variety of possibilities before deciding what to do.
- Insist that the result be based on some objective standard.

## Engineers as Manager

- Normative models to be used to avoid conflicts
  - **Hired Guns** – emphasis on the obligation to client, obligation to the society is limited to the minimum requirement.
  - **Value-neutral Analysts** – assessing the situation objectively, without taking into account of both types of obligations. The main obligation is to assess all alternatives and their implications
  - **Value-guided Advocates** – emphasis on values. These values are honesty, competence, diligence and loyalty

## Engineers as Moral Leaders

- It is the responsibilities of all professional to become moral leaders
- The aim is for the professional to *lead a group based on an accepted moral and ethical values*
- Moral leaders need to *identify important values and apply them when the need arises* and **built up the followers commitment to the values.**

## Engineers as Moral Leaders

- **Joining a professional body** is also part of manifestation of moral leadership especially when there is **active involvement.**
- Engineers can also become the **community leader** – part of social obligation



### Engineers as Advisors

- In policy-making, public officials and the general public had objective studies about **costs and benefits of alternative systems** of transportation, housing, and energy use.
- In planning, they need expert advise about **the feasibility, risks and benefits of particular technological projects**

### Engineers as Advisors in Policy-Making

- Therefore, engineers should **not influence by political factors or personal interests**
- The *responsibilities towards the public take precedence* over other type of responsibilities

### Engineers as Consultant

- Consultant engineers work in private practices
- They are compensated by fees for services they render/provide no by salaries from employers
- Because of this, they tend to have greater freedom to make decisions about what projects they undertake.
- Nonetheless, their freedom is not absolute/total: They shared with salaried engineers the need to earn a living

### Engineers as Consultant

- There are three areas where engineers as consultants need to be aware of
  - Advertising
  - Competitive bidding
  - Contingency fees

## Conflict Resolution

### Conflict: Definition

- A competitive or opposing action of incompatibles
- Antagonistic state or action
- Mental struggle resulting from incompatible or opposing needs, drives, wishes or external or internal demands
- The opposition of persons or forces that give rise to the dramatic action in a drama or fiction
- *Fight, battle, war*
- **Basically: a disagreement**

## **Conflict: Further Points to Consider**

- Perceived threat to one's well-being
- Response is based on the person's perceptions of the situation (not objective review of it)
- Conflicts contain substantive, procedural, and psychological dimensions
- To a large degree, conflicts are predictable and expectable situations that naturally arise
- Creative problem-solving strategies are essential

## **Conflict Resolution Styles**

- Competing
- Accommodating
- Avoiding
- Compromising
- Collaborating

## Conflict Styles and Their Consequences

*Competing:* relies on aggressive communication; low regard for relationships; low level of trust

*Accommodating:* one's needs is yielded to others' needs; preserving the relationship is most important

*Avoiding:* if we ignore it, it will go away; instead, conflict festers

*Compromising:* series of tradeoffs; satisfactory but not satisfying

*Collaborating:* pooling of individual needs and goals toward a common goal; "win-win"

## Conflict: Other Responses

- Emotional responses
  - Feelings we experience in conflict
  - Range from anger and fear to despair and confusion
- Cognitive responses
  - Our ideas and thoughts about conflict such as the "inner voice" or internal observations we have
- Physical responses
  - Include such responses heightened stress, bodily tension, increased perspiration, shallow or accelerated breathing, nausea, and rapid heartbeat
  - Stress management techniques needed

## Eight Steps for Conflict Resolution

### Step 1:

- ┆ Know thyself and take care of thyself
- ┆ Understand your perceptual filters, biases, and triggers
- ┆ Create a personally affirming environment (eat, sleep, exercise)

## Eight Steps for Conflict Resolution

### Step 2:

- ┆ Clarify personal needs threatened by a dispute
  - Substantive, procedural and psychological needs
- ┆ Look at BATNA, WATNA, and MLANTA
  - ┆ BATNA: Best Alternative to a Negotiated Agreement
  - ┆ WATNA: Worst Alternative to a Negotiated Agreement
  - ┆ MLANTA: Most Likely Alternative to a Negotiated Agreement
- ┆ Identify desired outcomes from a negotiated process