

UNIT V
GLOBAL ISSUES

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility

MULTINATIONAL CORPORATIONS

Multinational Corporations (MNC)

- Multinational corporations have many dimensions and can be viewed from several perspectives. These are ownership, management, strategy and structural etc. Multinational corporations are large companies which conduct their business operations in several states. Ideally multinational corporations would truly be global in nature, operating across borders with no single national emphasis. Multinational corporations do extensive business in more than one country.
- A key concern with regards to MNCs is their mobile nature. Logically, they tend to establish subsidiaries in countries where conditions are most favourable to their business operations. After all some of these large corporations are more important economic actors in global affairs than are many states. The benefits to MNC of doing business in less economically developed countries are the following reasons.
 1. Inexpensive labor
 2. Availability of natural resources
 3. Fresh market for products
 4. Favorable tax arrangements
- The benefits to the host countries are as follows :
 1. New jobs are generated.
 2. Jobs with higher pay and greater challenge.
 3. Transfer of advanced technology.
 4. Array of social benefits from sharing wealth.

Relative Values

- Relativism depends on the way in which values are supposed to be relative. Relativism concerned only with moral practices. Relativism also does not allow for the existence of an absolute set of ethics. Relativism are of three types.
 1. Ethical relativism
 2. Descriptive relativism
 3. Moral relationalism

Ethical Relativism

- **Ethical relativism** is the view that values are relative to and reducible to conventions, customs or laws. Actions are morally right within a particular society. It is right because the customs say it is right. Ethical relativism looks like encouraging the virtue of tolerance of differences among different groups, but it has limits. Ethical relativism might seem attractive because it is easily confused

with other view that are plausible.

Ethical relativism is the position that there are no moral absolutes, no moral right and wrongs. Instead, right and wrong are based on social norms.

- Ethical relativism is false since it implies absurdities. One advantage of ethical relativism is that it allows for a wide variety of cultures and practices. It also allows people to adapt ethically as the culture, knowledge and technology change in society. The disadvantage of ethical relativism is that truth, right and wrong and justice are all relative.

Descriptive Relativism

- **Descriptive relativism** also called cultural relativism. As a matter of fact, value beliefs and attitudes differ from culture to culture. The descriptive relativist simply notes certain sociological facts.

1. Factual claims : "X is considered right in society Y at time t" and "X is considered wrong in society Z at time t".

2. Empirical conclusion : Moralities are relative.

- Descriptive relativism is a statement that beliefs and attitudes about values differ from culture to culture. Descriptive relativism is obviously true. There are differences between the moral beliefs and attitudes of various cultures. Descriptive relativism does not entail ethical relativism.

Moral Relativism

- What is morally right or wrong depends on the prevailing view in the society or culture we happen to be dealing with moral judgements should be made in relation to factors that vary from case to case ; usually making it impossible to formulate rules that are both simple and absolute. Often presented as a tolerant view. If moral relativism is true, no one has a right to force his moral views on others. Moral relationalism is also obviously true. It is a remainder that moral judgements are contextual. Special circumstances can arise where people have to lie in order to save a life or to protect their privacy from intruders.
- Relationalism is important in multinational engineering context involving different cultural conventions. Relationalism is also consistent with ethical pluralism. Ethical pluralism means that customs can have great moral significance in deciding how we should act. The view of ethical pluralism is that, there is more than one justifiable moral perspective. In particular, there may be a number of morally permissible variations in formulating, interpreting and applying basic moral principles.
- Relationalism only say that foreign customs are often morally relevant. It does not say they are automatically decisive or self authoritative in determining what should be done. There are important connections between morality and religion in

the live of many people. Moral values are flexible and vague in ways that allow alternative moral traditions and perspectives without lapsing into the ethical relativist's view that customs are somehow self certifying.

International Rights

- Human right is a moral entitlement that places obligations on other people to treat one with dignity and respect. All the people have rights to life, liberty, and the pursuit of happiness. These rights are declared as independence of people, may be the these rights given to the people, but it does not create those rights. The rights already exist by virtue of the moral status of all people, including people living in countries that do not yet recognize those rights. International rights have great importance and are often put at risk.
- Exact requirement of international rights must be understood. These depends upon the economic resource and traditions in the societies which available. If we makes sense across cultures, it makes sense at all. The international rights suggested by Donaldson is as follows :

All the people have right to

1. Ownership of property
 2. Freedom from torture
 3. Freedom of physical movement
 4. A fair trial
 5. Subsistence
 6. Political participation
 7. Minimal education
 8. Physical security
 9. Freedom of speech and association
 10. Nondiscriminatory treatment
- All these human rights place restrictions on multinational corporations. Some societies can not recognize by laws and customs. One of the example is the right to nondiscrimination against women and minorities.
 - The right to physical security requires supplying protective goggles to workers while running metal lathes, even though this is not required by the laws of the host country. This type of rights are straightforward and cross cultural applications. For this type example, host countries not required any rules and regulation. Many difficulties may arise while implementing. Economically less

developed countries are often willing to take greater risks than developed countries including workers.

Promoting Morally Just Measures

- Multinational corporations should respect the basic rights of people where they want to do business. The activity of multinational corporations should benefit the host countries in which they do business. Multinational corporations must help the country overall economy and its workers.
- The business activities of MNC must do more overall good than bad. Multinational corporations must pay the tax and also take care of manufacturing of product. Product should not causing the easily preventable harms.

Technology Transfer

- Technologies that work well for us may be wrong for a developing economy. For example, promoting energy intensive lifestyles in densely populated nations could be highly detrimental should an engineering society encourage its members to study and discuss these issues ? should it take a corporate stance on energy and other technology issues ?

Environmental Ethics

- Environmental ethics is the discipline that studies the moral relationship of human beings to and also the value and moral status of the environment and its nonhuman contents. Not all injuries to nature occur as the results of quick, stark strikes. The effects build up only slowly but are no less damaging.

Holistic Approaches

- The whole is greater and more valuable than the constitutive parts.

These are :

1. Biocentric ethics
2. Ecocentric ethics
3. Sentient centered ethics

Biocentric Ethics

- It is life centered ethics. Precursors include Albert Scheveitzers "reverence for life" principle. Any theory that views all life as processing intrinsic value. An individualistic biocentric ethic recognizes intrinsic value in every living thing, if

seems impossible to have a holistic biocentric ethic, as species or aggregates of living things are not themselves living.

- However Schweitzer can be interpreted as believing in individual living things and a universal, non-individual "will-to-live". An **egalitarian** biocentric ethic accords equal value to all living things. Biocentric ethics represent a significant departure from classical and traditional ethical thinking.
 1. Unlike classical ethics, it focuses on attitudes and character rather than moral rules.
 2. Unlike traditional ethics, it is nonhierarchical and much more inclusive of the natural world.

Challenges to biocentric ethics

1. Individualism assumes that relationship between living things are all adversarial and that conflict and competition are the natural state of affairs.
2. Emphasis on egalitarianism leads to some weird, counter intuitive, if not wrong, moral applications.
3. Biocentric might be as prejudicial and discriminatory as sexism, racism and speciesism.
4. Emphasis on non-interference as a major normative principle falsely suggests or implies that humans are outside of or distinct from nature.

Ecocentric Ethics

1. Also called ecology centered ethics.
2. Early version of ecocentric ethics is Aldo Leopold's "Land Ethic".
3. Any ethics or philosophy that places an emphasis on ecological wholes and moves away from individual plants and animals, value is placed on these ecological systems as wholes.
4. Ecocentric ethics and philosophies are holistic ethics, rather than individualistic.
5. An ecocentric ethics appeals to ecology in one way or another for help in explaining and defending its conclusions.
6. Ecology is the study of the interactions of living organisms with each other and with their non living environments.
7. Ecosystem is an area in which a variety of living organisms interact in mutually beneficial way with their living and nonliving environment.
8. Ecology emphasizes such wholes as species, biotic diversity, ecological communities, ecosystems and biological, chemical and geological cycles.

9. Problems this appeal faces are

- a. Lack of complete agreement among ecologists about proper scientific methods models and conclusions.
- b. Difficulty of actually drawing any ethical conclusions from scientific observations.

Acid Rain

- Rain water is naturally slightly acidic. When power station burn coal they release sulphur dioxide and nitrogen oxide in to the atmosphere. These chemicals sometimes fall back to the ground. On other occasions they combine with water vapour in the air and form dilute acids in the rain water.
- Damage by acid rain in Canada :
 1. Fourteen thousand lakes are now so acidic that plants, animals, fish and birds are all dying.
 2. Trees in eastern canada are dying.
 3. 84% of agricultural land in eastern canada is polluted by acid rain.
 4. 80% of canadians live in area where acid rain level are above acceptable levels.
 5. Buildings are being affected, especially those made of marble, granite and limestone.

COMPUTER ETHICS

- Analysis of the nature and social impact of computer technology as well as corresponding formulation and justification of policies for the ethical use of such technology. From the 1940 to 1960, nobody known the computer ethics. In mid 1970, Walter maner defined the field computer ethics. Study of computer ethics is a window through which we view a society. It includes the social, political and economic forces at work place.
- A computer can be used to do almost anything thought of in terms of a series of steps or operations, with input and output. But the technology is never used in a vacuum. Social context must be understand while deciding a policies. Social contact is intertwined with ethical issues. Policy vacuums cannot be filled without taking social context into account. The present state of computers is sometimes compared to that of the automobile in the early part of this century.

- Computers will cause to a variety of moral problems. Computer ethics is used to deal with these problems. Computer ethics has special importance for the new groups of professionals emerging with computer technology. For example, designers of computers, system analysts, programmers and operators. Let us consider the following issues in the computer ethics.

Job Destruction and Creation

- It is related to computers and unemployment as well as computers and employment. In computers and unemployment, after doing computerization, it eliminates some jobs. What employer attitudes are desirable in confronting this situation ? No employer, of course can afford to pay people for doing no work. Computer generated unemployment will be an important social problem, but in the long run, information technology will create may more jobs than it eliminates. Within large organization it is often possible to read just work assignments and work loads, to change jobs voluntarily, to wait for people to retire etc.

Customer Relations

- Public accountability of businesses using computer based services is the major factor to be consider. It has two sides. It can be very difficult or simple for a consumer to correct computer errors or notice the errors. The policies should be beneficial to consumer needs and interests. Make the customer less vulnerable.

Biased Software

Computer software (programs) can be easily be biased. For constructing any type application, computer software and hardware is used.

Stock Trading

Program trading is the automatic, hands off, computer trading of stocks, futures and options on the stock market. Bombay, Delhi and Chennai stock exchange uses computer programs for stock market. An electronic trading system linking many stock traders, can they prevent its members from exercising their power to manipulate the market when as alleged, some have postponed requested purchases until after they have bought some shares of the same stock on their own. Second example is of currency traders. Currency traders can monitor exchange rates by subscribing to a satellite broadcast, then compute optimal buying and selling strategies. The result may profit the trader, but harm the stability of the currencies.

- Other factors are the unrealistic expectations, political power and military weapons.

Property

- It is related to the use of computers in embezzlement and other forms of stealing money or financial assets. Unauthorised person uses a telephone computer system to obtain private phone number using computer. Following are the some of the factors which make the computer troublesome.
 1. Speed of the computer and geographic coverage. It allows large number of people to be victimized.
 2. It is difficult to trace the underlying transactions to apprehend the thieves.
- This problem is compounded when the communication lines linking the computers involved cross national boundaries.

Some of the example are given below.

These are the abuse of compute which related to fraud and theft.

1. Cheating by employees at work.
 2. Cheating clients and consumers.
 3. Stealing by former employees.
 4. Violating contracts for computer sales or service.
 5. Conspiring to use computer networks to engage in widespread fraud.
- Computer crimes, such as embezzlement or planting of logic bombs are normally committed by trusted personnel who have permission to use the computer system. Computer security, therefore, must also be concerned with the actions of trusted computer users. The technology for preventing crime and catching criminals has lagged behind implementation of new computer applications.
 - There are often inadequate safe guards against computer crime. The penalties for computer crime, as for white collar crime in general are mild compared to those for more conventional crimes. Computer crime raises obvious moral concerns of honesty, integrity and trust. It also forces a rethinking of public attitudes about crime and its punishment.
 - The potential for computer crime should enter significantly into the thinking of engineers who designs computers. Protection against criminal abuse has become a major constraint for effective and successful design of many computer systems and programs.
 - Another major risk to computer security is the so called hacker who breaks into someone's computer system without permission.

Data and Software

- Information stored in a computer is so called data. Software is a program which gives direction to the hardware to do something. All these aspects of computer are property, which can be privately owned and which can be protected. Some of the concept of property is given below. The persons property is anything they create through their labor. Property becomes primarily what laws define as the permissible use of things.
- Property laws defines as
 1. Exchanges of ownership
 2. What can be owned
 3. Use of things of a given type.
- For example, bike owner cannot drive on the public roads until the owner satisfies the laws about vehicles. Computer hardware is protected by patent laws. Software can be protected by copyright and trade secret laws. Trade secrets are useless once software is made publicly available as a marketed product. In this condition, copyright laws offer the best protection. Roughly algorithms cannot be copyrighted. They are regarded as mathematical formulas that can be discovered but not owned. Source code can be copyrighted. Patents on software are restricted to detailed coding sequences and other process rather than final products. Software patents are difficult to obtain. They also create international disagreements because patent laws are different in different country.

Privacy

- The coming into being of new communication and computer technology has generated a host of ethical problems and some of the more pressing concern the moral notion of privacy. Major computer privacy laws were passed in the USA in 1970. Computer threatened privacy has remained as a topic of public concern. The ease of efficiency with which computer and computer networks can be used to gather, store, search, compare, retrieve and share personal information make computer technology specially threatening to anyone who wishes to keep various kinds of sensitive information out of the public domain.
- The variety of privacy related issues generated by computer technology has led philosophers and other thinkers to re-examine the concept of privacy itself. Theory of privacy defined as control over personal information. On the other hand, philosopher Moor and Tavani have argued that control of personal information is insufficient to establish or protect privacy and the concept of privacy itself is best defined in terms of restricted access, not control.

Achieving an Ethical Computer Operation

1. Formulate a code of conduct.
2. Recognize ethical behaviour.
3. Establish rules for personal use of computer services and proprietary rights to computer data and programs.
4. Promote computer crime laws by keeping employees informed.
5. Encourage participation in professional societies.
6. Focus attention on ethics i.e. training programs.
7. Set an example.

Importance of Computer Ethics

1. Logical malleability - Ability to program computer to do anything you want it to do.
2. Transformation factor - Computers can change the way things are done.
3. The invisibility factor includes, invisible programming, invisible abuse and invisible complex calculations.

Impact of Computers on Work

1. Some jobs have been eliminated.
2. Other jobs have been created.

WEAPONS DEVELOPMENT

A weapon is an instrument used for the purpose of causing harm or damage to people, animals or structures. Weapons are used in hunting, attack, self-defense, or defense in combat and range from simple implements like clubs and spears to complicated modern machines such as intercontinental ballistic missiles. One who possesses or carries a weapon is said to be armed.

In a broader context weapons include anything used to gain an advantage over an adversary or to place them at a disadvantage. Examples include the use of sieges, tactics, and psychological weapons which reduce the morale of an enemy.

Classification

By user

- what person or unit uses the weapon
- Personal weapons (or small arms) - designed to be used by a single person.
- Hunting weapon - primarily for hunting game animals for food or sport

- Infantry support weapons - larger than personal weapons, requiring two or more to operate correctly.
- Fortification weapons - mounted in a permanent installation, or used primarily within a fortification.
- Mountain weapons - for use by mountain forces or those operating in difficult terrain.
- Vehicle weapons - to be mounted on any type of military vehicle.
- Railway weapons - designed to be mounted on railway cars, including armored trains.
- Aircraft weapons - carried on and used by some type of aircraft, helicopter, or other aerial vehicle.
- Naval weapons - mounted on ships and submarines.
- Space weapons - are designed to be used in or launched from space.

By function

- the construction of the weapon and principle of operation
- Antimatter weapons (theoretical) would combine matter and antimatter to cause a powerful explosion.
- Archery weapons operate by using a tensioned string to launch a projectile.
- Artillery are capable of launching heavy projectiles over long distances.
- Biological weapons spread biological agents, causing disease or infection.
- Chemical weapons, poisoning and causing reactions.
- Energy weapons rely on concentrating forms of energy to attack, such as lasers or sonic attack.
- Explosive weapons use a physical explosion to create blast concussion or spread shrapnel.
- Firearms use a chemical charge to launch projectiles.
- Improvised weapons are common objects, reused as weapons.
- Incendiary weapons cause damage by fire.
- Non-lethal weapons are designed to subdue without killing.
- Magnetic weapons use magnetic fields to propel projectiles, or to focus particle beams.
- Melee weapons operate as physical extensions of the user's body and directly impact their target.
- Missiles are rockets which are guided to their target after launch. (Also a general term for projectile weapons).
- Nuclear weapons use radioactive materials to create nuclear fission and/or nuclear fusion detonations.
- Primitive weapons make little or no use of technological or industrial elements.
- Ranged weapons (unlike Mêlée weapons), target a distant object or person.
- Rockets use chemical propellant to accelerate a projectile
- Suicide weapons exploit the willingness of their operator to not survive the attack.
- Trojan weapons appear on face value to be gifts, though the intent is to in some way to harm the recipient.
- the type of target the weapon is designed to attack
- Anti-aircraft weapons target missiles and aerial vehicles in flight.
- Anti-fortification weapons are designed to target enemy installations.
- Anti-personnel weapons are designed to attack people, either individually or in numbers.
- Anti-radiation weapons target sources of electronic radiation, particularly radar emitters.
- Anti-satellite weapons target orbiting satellites.
- Anti-ship weapons target ships and vessels on water.
- Anti-submarine weapons target submarines and other underwater targets.
- Anti-tank weapons are designed to defeat armored targets.
- Area denial weapons target territory, making it unsafe or unsuitable for enemy use or travel.
- Hunting weapons are civilian weapons used to hunt animals.
- Infantry support weapons are designed to attack various threats to infantry units

ENGINEERS AS MANAGERS:

- In any professionals, engineers undergo the intensive technical training . Most of the organization prefer engineers as managers. Because the engineers technical understanding is essential to managing technological corporations. Other reason is, easy to teach.
- The engineers easily understand the business side of corporate work than the non-technical persons. Other parameter which any organization consider as
 1. Engineers strengths in quantitative analysis.
 2. Engineers strong work ethics
 3. Confidence to solve any type of problem.

Engineers are interested as a manager because of the following parameter

1. Higher incentive with higher salaries.
2. Authority increases
3. Widened area of responsibility
4. prestige point

Manager as Professionals

1. To switch over from technical job to management job requires many adjustments.
2. Extra knowledge is required about finances, coordinating of people, motivating other people, to take risking decisions etc.
3. At the same time, engineers have the ethical responsibilities which is mentioned in the code of ethics.
4. Social responsibility movement emphasized in 1960 which gives wider responsibilities of the manager.
5. Responsibility of the managers covers the employees dealers, customers suppliers etc.
6. The responsibility of managers is to conduct the business in accordance with their desires.
7. Nobel Laureate Milton Friedman attacked the social responsibility movement in a widely real article, i.e. "The social responsibility of business is to increases its profits."

8. Friedman view point is that, managers ethics reduce to the one responsibility to responsibility to maximize profits for stockholders.
9. Author view about engineers is to protect the public safety, health and welfare of the public.
10. In addition to this, engineers takes responsibilities of the stockholders.
11. All these view of Friedman may be correct or may not be.
12. Primary responsibility of managers is to produce a valueable product.
13. Manager also maintain the respect for persons, including customers employees etc.
14. Profit is not main objective but safety of person is come first.
15. But the profit is the main parameters for any type of business. Also produce the useful product with good service.
16. Managers and engineers ultimate goal is to make valuable produce with profitable.
17. Organization are of two types :
 - a) For profit corporations
 - b) Not for profit corporations
18. Profit corporations is successful only when they make a profit.
19. Not for profit corporations are universities, charitable group, religious organizations etc.
20. Good business and sound ethics go together for the most part and in the long run.
21. The moral roles of engineers and managers are complementary and symbiotic rather than opposed.
22. Higher management tends to do dominated by a culture that sometimes clashes with the culture of professionals work of engineers.

Ethical Climate in Organization

1. Ethical climate is required in any organization. It is produced by a combination of formal organization and policies,
2. An ethical climate is not a thing, but a process.
3. An ethical climate is either developing or deteriorating, enriching itself or impoverishing itself. It needs constant care and attention.
4. Managers have the authority and the responsibility to resolve or prevent damaging conflicts.

5. The managers task is to create climates in which conflicts are addressed constructively.
6. The ethical climate is also strongly affected by the strategic choices of the form, its organizational structure, hiring policies, performance standards, reporting and information system, reward and incentive programs and internal controls.
7. Management task is to design organizations and procedures that make it easier rather than harder to do the right thing.
8. Conflict among the persons differ according to the level of management and particular corporate setting.
9. Engineering project manager's conflict are listed below :
 - a) Conflict over schedules.
 - b) Conflict over personnel resource made available for project.
 - c) Conflicts over technical issue.
 - d) Conflicts over administrative procedures.
 - e) Personality conflicts.
 - f) Conflicts over cost.
10. Managing the ethical climate of an organization is not easy given the myriad influences, both internal and external on the firm.
11. Manager's efforts to strengthen the ethical climate in their organizations will have real benefit for employees, for the performance of the firms and for society at large.

Principles of Conflict Revolutions:

- Following parameter is considered to resolve the conflicts. They are as follows
 1. People - Separate the people from the problem.
 2. Interests - Focus on interest, not positions.
 3. Options - Generate a variety of possibilities before doing any type and works.
 4. Criteria - Insists that the result be based on some objective standard.

Conflict Management Strategies:

1. Collaboration
 2. Compromise
 3. Competition
 4. Accommodations
 5. Avoidance
- a) **Collaboration** helps build commitment and reduce bad feelings. The drawbacks are that it takes time and energy.
 - b) **Compromise** is generally used to achieve temporary solutions, to avoid destructive power struggles or when time pressures exist. One drawback is that partners can lose sight of important values and using term objectives.
 - c) **Competition** strategy includes most attempts at bargaining. It is generally used when basic rights are at stakes at to set a precedent.
 - d) **Accommodations** strategy is generally used when the issue is more important to others than to you. It is also appropriate when you recognize that you are wrong. The drawbacks are that your own ideas and concerns do not get attention.
 - e) **Avoidance** strategy is generally used when the issue trivial at other issues are more pressing. It is also used when confrontation has a light potential for damage or more information is needed. The drawback are that important decisions may be made by default.

CONSULTING ENGINEERS:

Consulting engineers do their private practice. They charge the fees for their services. These engineers have greater freedom to make decisions about the projects they undertake. Engineering consultancy service make significant contribution to sustainable development of the nation, and in safeguarding health, happiness and safety of society. In safety matters, the consulting engineers may have greater responsibility than salaried engineers. Because they are fully responsible for that. In following field the consulting engineers dare involved.

Adverting:

Adverting is one of major role to sale a product. It comes under sales department where some corporate engineers are involved in this field. Consulting engineers

are directly responsible for advertising their services. But in any organisation, advertising come under personal department and sales executive. Advertising the services, job opening and relationship with other company, all factor care should be taken by personnel department.

- Competitive advertising was a moral issue in engineering code of ethics is mandatory for all the consulting engineers. Competitive advertising caused friction among those in the field. The product look better because of the deceptive advertising. But the product is actually not better than what in advertising shows. Giving better look to the product is done many ways. These are

1. Lie outright
 2. Half-truth
 3. Exaggeration
 4. Making false innuendos, suggestions
 5. Manipulation of the unconscious.
- It is not possible to check the advertising. Whether the given ad is deceptive or not. NSPE code of ethics is as follows :
 - "Use of statements containing a material misrepresentation of fact or omitting a material fact necessary to keep the statement from being misleading; statements intended or likely to create an unjustified expectation; statements containing prediction of future success; statements containing an opinion as to the quality of the engineer's services; or statement intended or likely to attract clients by the use of showmanship, puffery or self laudation, including the use of slogans, jingles or sensational language format".
 - Different rules for different products is applicable for advertising. Some products require warnings to be printed on the cover like cigarettes, tobacco etc. Strong restrictions on misleading advertising in this area are especially important.

Competitive bidding is used in industrial and construction firms. They are doing cost estimation with some accuracy which is based on the design specifications. Competitive bidding is required in the engineering firms. Otherwise client totally depends upon the reputation or proven qualifications.

Contingency fee is dependent on some special condition beyond the normal performance of satisfactory work. If the engineer succeeds in saving the customer money, then only contingency fee is paid. The contingency fee is fixed percentage or agreed upon some amount.

ENGINEERS AS EXPERT WITNESSES AND ADVISORS:

- Engineers also serve as consultants by providing expert advice. The consultancy may be in various fields such as :
 - Causes of accidents
 - Malfunctions
 - Technical experts
 - Public planning
 - Policy making
 - Potential value of patents
- Engineers role of analyst states and assesses facts.
- Engineers role of advocate makes recommendations about responsibility and preferable options.

Expert Witnesses in Court:

- Engineers may be hired in civil lawsuits and in criminal proceedings. Engineers can work as expert work as expert witnesses and as specialists in forensic engineering.
- An expert engineers' report is useful in variety of cases :
 - Defective products
 - Personal injury
 - Property damage
 - Traffic accidents
 - Compensatory damage
 - Violation of rights
- Attorneys hire engineers to serve the interests of their clients. Engineers have responsibilities to those who hire them. They must answer questions truthfully.
- Engineers must not become hired guns who are engaged in outright lies and distortions.

Abuses:

- There are many abuses to engineers. The most common abuses are :
 - a) Hired guns
 - b) Financial biases
 - c) Ego biases
 - d) Sympathy biases

a) Hired Guns

- Some engineers help attorneys favourably to their clients by violating the standards of honesty.

b) Financial biases

- Financial bias influences investigations. In advisory context it may tend to bias the judgement of expert witnesses, which is unethical.

c) Ego biases

- Competitive attitudes can influence judgement. Engineers can be influenced with their own side of dispute. There is also a combination of desires to serve the interests of ones' client and to be well regarded by the client.

d) Sympathy biases

- The courts are filled with human drama, one may feel great sympathy for opposing attorney's client which can affect investigations.
- Engineer must overcome these biases and maintain their integrity and serve as an expert witness.

MORAL LEADERSHIP:

- Engineers provide leadership in different roles.
 - As managers
 - Business entrepreneurs
 - Corporate consultants
 - Academician
 - Government officials

Morally Creative Leaders:

- Leadership indicates success in moving a group towards goal. Moral leaders are individuals who direct, motivate, organize and move towards morally valuable goals.
- Frederick Taylor, father of scientific management argued that technologists were best qualified to govern because of their technical expertise, their logical, practical and unprejudiced mind. Engineers have their share of moral leadership to contribute to their professional societies, to their profession and to the communities.
- Moral leadership means employing morally permissible means to stimulate groups to move toward morally desirable ends.

CODE OF CONDUCT:

Engineering codes of ethics approved by two different societies are mentioned there.

a) ABET

- Codes of ethics for engineers approved by the Accreditation Board for Engineering and Technology (ABET) in October 1977 are as follows.

Code of Ethics of Engineers

The fundamental principles

- Engineers uphold and advance the integrity , honour and dignity of the engineering profession by -
 - i) Using their knowledge and skill for the enhancement of human welfare.
 - ii) Being honest and impartial and serving with fidelity the public and their employers.
 - iii) Striving to increase the competence and prestige of the engineering profession and
 - iv) Supporting the professional and technical societies of their disciplines.

The fundamental canons

1. Engineers shall hold paramount the safety , health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agent or trustees and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honour, integrity and dignity of the profession.
7. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.

IEEE

- Codes of ethics for engineers approved by the Institute of Electrical and Electronic Engineers (IEEE) in August 1990 are as follows -

Codes of Ethics

- We the members off IEEE , in recognition of the important of our technologies offering the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities, we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree :
 1. To accept responsibility in making engineering decision constitute with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment.
 2. To avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist.
 3. To be honest and realistic in stating claims or estimates based on available data.
 4. To reject bribery on all its forms.
 5. To improve the understanding of technology; its appropriate application, and potential consequences.
 6. To maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience or after full disclosure of pertinent limitations.
 7. To seek, accept and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributor of others.
 8. To treat fairly all persons regardless of such factors as race, religion, gender, dis-ability , age or national origin.
 9. To avoid injuring others, their property, reputation or employment by false or malicious action.
 10. To assist colleagues and co-worker in their professional development and to support them in following this code of ethics.
- We do not intend our frame work to replace such codes, but introduce it in to the literate to facilitate discussion and recognition of ethical dilemmas in practice.

c) American Society of Mechanical Engineers (ASME)

- Codes of ethics referenced in ASME constitution are as follows -

Code of Ethics of Engineers**The fundamental principles**

- Engineers uphold and advance the integrity, honour and dignity of the engineering profession by :
 - i) Using their knowledge and skill for the enhancement of human welfare.
 - ii) Being honest and impartial, and serving with fielding the public their employers and clients.
 - iii) Striving to increasing the competence and prestige of the engineering profession.

Fundamental Canons

- i) Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
- ii) Engineers shall perform services only in the areas of their competence.
- iii) Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional and ethical development of those engineers under their supervision.
- iv) Engineers shall act in professional matters for each employer or client as faithful agents or trustees and shall avoid conflicts of interest or the appearance of conflicts of interest.
- v) Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
- vi) Engineers shall associate only reputable persons or organizations.
- vii) Engineers shall issue public statements only in an objective and truthful manner.

d) American Society of Civil Engineers (ASCE)

- Codes of ethics referenced in ASCE constitution are as follows -

Code of Ethics of Engineers

The fundamental principles

- Engineers uphold and advance the integrity, honour and dignity of the engineering profession by :
 - i) Using their knowledge and skill for the enhancement of human welfare.
 - ii) Being honest and impartial, and serving with fielding the public their employers and clients.
 - iii) Striving to increasing the competence and prestige of the engineering profession.

d) American Society of Civil Engineers (ASCE)

- Codes of ethics referenced in ASCE constitution are as follows -

Code of Ethics of Engineers

The fundamental principles

- Engineers uphold and advance the integrity, honour and dignity of the engineering profession by :
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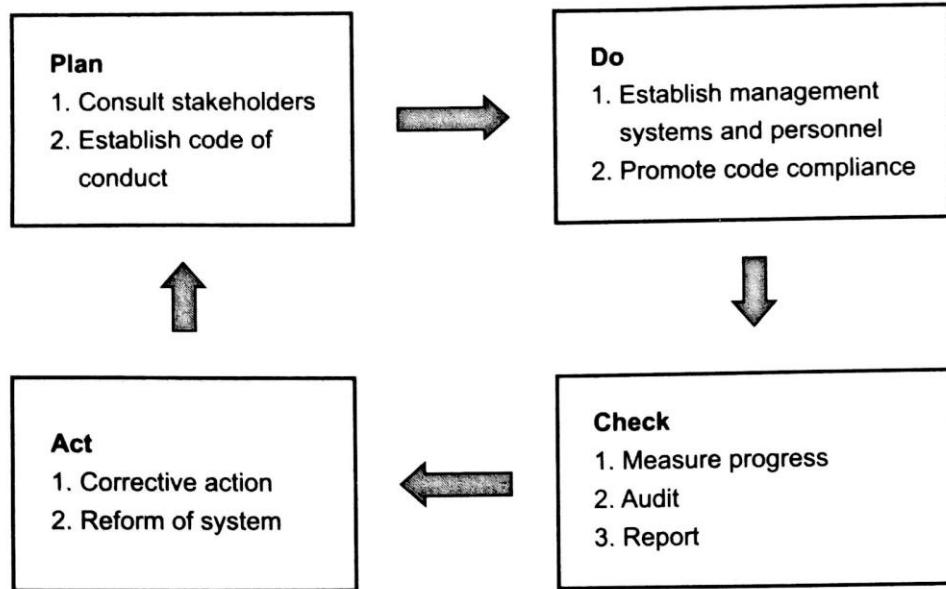
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Corporate Social Responsibility:

- The idea of CSR first came up in 1953 when it became an academic topic in HR Bowen's "Social Responsibilities of the Business". Since then, there has been continuous debate on the concept and its implementation. Although the idea has been around for more than half a century, there is still no clear consensus over its definition.
- Corporate Social Responsibility (CSR) refers to a business practice that involves participating in initiatives that benefit society. Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.
- CSR is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders.
- CSR is the process by which businesses negotiate their role in society. In the business world, ethics is the study of morally appropriate behaviors and decisions, examining what "should be done".
- One of the most contemporary definitions is from the World Bank Group, stating, "Corporate social responsibility is the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large, to improve their lives in ways that are good for business and for development".
- Key issues of CSR are environmental management, eco-efficiency, responsible sourcing, stakeholder engagement, labour standards and working conditions, employee and community relations, social equity, gender balance, human rights, good governance, and anti-corruption measures.
- CSR management uses concept of Plan, Do, Check, Act method.



- The purpose of CSR is to make corporate business activities sustainable in its three dimensions :
 1. Economic
 2. Social
 3. Environmental

Benefits of CSR

1. Source of competitive advantage
2. Attracts ethically conscious customers
3. Increase profit in the long run
4. Reduction of costs
5. Contribute to economic development
6. Improve the quality of life for its workforce and their families
7. Improvement of society
8. Tax-free incentives for businesses.