JEPPIAAR INSTITUTE OF TECHNOLOGY

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LECTURE NOTES

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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

5.1   Multinational Corporations

A multinational corporation (MNC), also called a transnational corporation (TNC), or multinational enterprise (MNE), is a corporation or an enterprise that manages production or delivers services in more than one country. It can also be referred to as an international corporation.

The International Labour Organization (ILO) has defined[citation needed] an MNC as a corporation that has its management headquarters in one country, known as the home country, and operates in several other countries, known as host countries.

The Dutch East India Company was the first multinational corporation in the world and the first company to issue stock. It was also arguably the world's first mega corporation, possessing quasi-governmental powers, including the ability to wage war, negotiate treaties, coin money, and establish colonies.

The first modern multinational corporation is generally thought to be the East India Company. Many corporations have offices, branches or manufacturing plants in different countries from where their original and main headquarters is located.

Some multinational corporations are very big, with budgets that exceed some nations' GDPs. Multinational corporations can have a powerful influence in local economies, and even the world economy, and play an important role in international relations and globalization.

Multinational corporations have played an important role in globalization. Countries and sometimes subnational regions must compete against one another for the establishment of MNC facilities, and the subsequent tax revenue, employment, and economic activity. To compete, countries and regional political districts sometimes offer incentives to MNCs such as tax breaks, pledges of governmental assistance or improved infrastructure, or lax environmental and labor standards enforcement. This process of becoming more attractive to foreign investment can be characterized as a race to the bottom, a push towards greater autonomy for corporate bodies, or both.

However, some scholars for instance the Columbia economist Jagdish Bhagwati, have argued that multinationals are engaged in a 'race to the top.' While multinationals certainly regard a low tax burden or low labor costs as an element of comparative advantage, there is no evidence to suggest that MNCs deliberately avail themselves of lax environmental regulation or poor labour standards.

As Bhagwati has pointed out, MNC profits are tied to operational efficiency, which includes a high degree of standardisation. Thus, MNCs are likely to tailor production processes in all of their operations in conformity to those jurisdictions where they operate (which will almost always include one or more of the US, Japan or EU) that has the most rigorous standards.

As for labor costs, while MNCs clearly pay workers in, e.g. Vietnam, much less than they would in the US (though it is worth noting that higher American productivity—linked to technology—means that any comparison is tricky, since in America the same company would probably hire far fewer people and automate whatever process they performed in Vietnam with manual labour), it is also the case that they tend to pay a premium of between 10% and 100% on local labor rates.

Finally, depending on the nature of the MNC, investment in any country reflects a desire for a long term return. Costs associated with establishing plant, training workers, etc., can be very high; once established in a jurisdiction, therefore, many MNCs are quite vulnerable to predatory practices such as, e.g., expropriation, sudden contract renegotiation, the arbitrary withdrawal or compulsory purchase of unnecessary 'licenses,' etc. Thus, both the negotiating power of MNCs and the supposed 'race to the bottom' may be overstated, while the substantial benefits that MNCs bring (tax revenues aside) are often understated **Market withdrawal**

Because of their size, multinationals can have a significant impact on government policy, primarily through the threat of market withdrawal. For example, in an effort to reduce health care costs, some countries have tried to force pharmaceutical companies to license their patented drugs to local competitors for a very low fee, thereby artificially lowering the price.

When faced with that threat, multinational pharmaceutical firms have simply withdrawn from the market, which often leads to limited availability of advanced drugs. In these cases, governments have been forced to back down from their efforts. Similar corporate and government confrontations have occurred when governments tried to force MNCs to make their intellectual property public in an effort to gain technology for local entrepreneurs.

When companies are faced with the option of losing a core competitive technological advantage or withdrawing from a national market, they may choose the latter. This withdrawal often causes governments to change policy. Countries that have been the most successful in this type of confrontation with multinational corporations are large countries such as United States and Brazil[citation needed], which have viable indigenous market competitors.

Lobbying

Multinational corporate lobbying is directed at a range of business concerns, from tariff structures to environmental regulations. There is no unified multinational perspective on any of these issues. Companies that have invested heavily in pollution control mechanisms may lobby for very tough environmental standards in an effort to force non-compliant competitors into a weaker position.

Corporations lobby tariffs to restrict competition of foreign industries. For every tariff category that one multinational wants to have reduced, there is another

multinational that wants the tariff raised. Even within the U.S. auto industry, the fraction of a company's imported components will vary, so some firms favor tighter import restrictions, while others favor looser ones. Says Ely Oliveira, Manager Director of the MCT/IR: This is very serious and is very hard and takes a lot of work for the owner.

Multinational corporations such as Wal-mart and McDonald's benefit from government zoning laws, to create barriers to entry.

Many industries such as General Electric and Boeing lobby the government to receive subsidies to preserve their monopoly.

Patents

Many multinational corporations hold patents to prevent competitors from arising. For example, Adidas holds patents on shoe designs, Siemens A.G. holds many patents on equipment and infrastructure and Microsoft benefits from software patents. The pharmaceutical companies lobby international agreements to enforce patent laws on others. **Government power**

In addition to efforts by multinational corporations to affect governments, there is much government action intended to affect corporate behavior. The threat of nationalization (forcing a company to sell its local assets to the government or to other local nationals) or changes in local business laws and regulations can limit a multinational's power. These issues become of increasing importance because of the emergence of MNCs in developing countries.

Micro-multinationals

Enabled by Internet based communication tools, a new breed of multinational companies are growing in numbers. (Copeland, Michael V. (2006-06-29). These multinationals start operating in different countries from the very early stages. These companies are being called micro-multinationals.

What differentiates micro-multinationals from the large MNCs is the fact that they are small businesses. Some of these micro-multinationals, particularly software development companies, have been hiring employees in multiple countries from the beginning of the Internet era. But more and more micro-multinationals are actively starting to market their products and services in various countries. Internet tools like Google, Yahoo, MSN, Ebay and Amazon make it easier for the micro-multinationals to reach potential customers in other countries.

Service sector micro-multinationals, like Facebook, Alibaba etc. started as dispersed virtual businesses with employees, clients and resources located in various countries. Their rapid growth is a direct result of being able to use the internet, cheaper telephony and lower traveling costs to create unique business opportunities. Low cost SaaS (Software As A Service) suites make it easier for these companies to operate without a physical office.

Hal Varian, Chief Economist at Google and a professor of information economics at U.C.Berkeley, said in April 2010, "Immigration today, thanks to the Web, means something very different than it used to mean. There's no longer a brain drain but brain circulation. People now doing startups understand what opportunities

are available to them around the world and work to harness it from a distance rather than move people from one place to another."

5.2   Environmental Ethics

Environmental ethics believes in the ethical relationship between human beings and the natural environment. Human beings are a part of the society and so are the other living beings. When we talk about the philosophical principle that guides our life, we often ignore the fact that even plants and animals are a part of our lives.

They are an integral part of the environment and hence have a right to be considered a part of the human life. On these lines, it is clear that they should also be associated with our guiding principles as well as our moral and ethical values.

What is Environmental Ethics?

We are cutting down forests for making our homes. We are continuing with an excessive consumption of natural resources. Their excessive use is resulting in their depletion, risking the life of our future generations. Is this ethical? This is the issue that environmental ethics takes up. Scientists like Rachel Carson and the environmentalists who led philosophers to consider the philosophical aspect of environmental problems, pioneered in the development of environmental ethics as a branch of environmental philosophy.

The Earth Day celebration of 1970 was also one of the factors, which led to the development of environmental ethics as a separate field of study. This field received impetus when it was first discussed in the academic journals in North America and Canada. Around the same time, this field also emerged in Australia and Norway. Today, environmental ethics is one of the major concerns of mankind.

When industrial processes lead to destruction of resources, is it not the industry's responsibility to restore the depleted resources? Moreover, can a restored environment make up for the originally natural one? Mining processes hamper the ecology of certain areas; they may result in the disruption of plant and animal life in those areas. Slash and burn techniques are used for clearing the land for agriculture.

Most of the human activities lead to environmental pollution. The overly increasing human population is increasing the human demand for resources like food and shelter. As the population is exceeding the carrying capacity of our planet, natural environments are being used for human inhabitation.

Thus human beings are disturbing the balance in the nature. The harm we, as human beings, are causing to the nature, is coming back to us by resulting in a polluted environment. The depletion of natural resources is endangering our future generations. The imbalance in nature that we have caused is going to disrupt our life as well. But environmental ethics brings about the fact that all the life forms on Earth have a right to live. By destroying the nature, we are depriving these life forms of their right to live. We are going against the true ethical and moral values by disturbing the balance in nature. We are being unethical in treating the plant and animal life forms, which coexist in society.

Human beings have certain duties towards their fellow beings. On similar lines, we have a set of duties towards our environment. Environmental ethics says that we should base our behavior on a set of ethical values that guide our approach towards the other living beings in nature.

Environmental ethics is about including the rights of non-human animals in our ethical and moral values. Even if the human race is considered the primary concern of society, animals and plants are in no way less important. They have a right to get their fair share of existence.

We, the human beings, along with the other forms of life make up our society. We all are a part of the food chain and thus closely associated with each other. We, together form our environment. The conservation of natural resources is not only the need of the day but also our prime duty.

5.3   Computer Ethics

Ethics is a set of moral principles that govern the behavior of a group or individual. Therefore, computer ethics is set of moral principles that regulate the use of computers. Some common issues of computer ethics include intellectual property rights (such as copyrighted electronic content), privacy concerns, and how computers affect society. For example, while it is easy to duplicate copyrighted electronic (or digital) content, computer ethics would suggest that it is wrong to do so without the author's approval. And while it may be possible to access someone's personal information on a computer system, computer ethics would advise that such an action is unethical.

As technology advances, computers continue to have a greater impact on society. Therefore, computer ethics promotes the discussion of how much influence computers should have in areas such as artificial intelligence and human communication. As the world of computers evolves, computer ethics continues to create ethical standards that address new issues raised by new technologies.

The **Ten Commandments of Computer Ethics** were created in 1992 by the Computer Ethics Institute. The commandments were introduced in the paper "In Pursuit of a 'Ten Commandments' for Computer Ethics" by Ramon C. Barquin as a means to create "a set of standards to guide and instruct people in the ethical use of computers."

The ten Commandments
1. Do not interfere with other people's computer work.
2. Do not snoop around in other people's computer files.
3. Do not spy on another person's computer data.
4. Do not use a computer to steal.
5. Do not use a computer to bear false witness
6. Do not copy or use proprietary software for which you have not paid.
7. Do not use other people's computer resources without authorization or proper compensation.
8. Do not appropriate other people's intellectual output.

9. Do think about the social consequences of the program you are writing or the system you are designing.
10. Do always use a computer in ways that ensure consideration and respect for your fellow humans.

1.   Commandment 1

Simply put: Do not use a computer in ways that may harm other people.

Explanation: This commandment says that it is unethical to use a computer to harm another user. It is not limited to physical injury. It includes harming or corrupting other users' data or files. The commandment states that it is wrong to use a computer to steal someone's personal information. Manipulating or destroying files of other users is ethically wrong. It is unethical to write programs, which on execution lead to stealing, copying or gaining unauthorized access to other users' data. Being involved in practices like hacking, spamming, phishing or cyber bullying does not conform to computer ethics.

2.   Commandment 2

Simply put: Do not use computer technology to cause interference in other users' work.

Explanation: Computer software can be used in ways that disturb other users or disrupt their work. Viruses, for example, are programs meant to harm useful computer programs or interfere with the normal functioning of a computer. Malicious software can disrupt the functioning of computers in more ways than one. It may overload computer memory through excessive consumption of computer resources, thus slowing its functioning. It may cause a computer to function wrongly or even stop working. Using malicious software to attack a computer is unethical.

3.   Commandment 3

Simply put: Do not spy on another person's computer data.

Explanation: We know it is wrong to read someone's personal letters. On the same lines, it is wrong to read someone else's email messages or files. Obtaining data from another person's private files is nothing less than breaking into someone's room. Snooping around in another person's files or reading someone else's personal messages is the invasion of his privacy. There are exceptions to this. For example, spying is necessary and cannot be called unethical when it is done against illegitimate use of computers. For example, intelligence agencies working on cybercrime cases need to spy on the internet activity of suspects.

4.   Commandment 4

Simply put: Do not use computer technology to steal information.

Explanation: Stealing sensitive information or leaking confidential information is as good as robbery. It is wrong to acquire personal information of employees from an employee database or patient history from a hospital database or other such information that is meant to be confidential. Similarly, breaking into a bank account to collect information about the account or account holder is wrong. Illegal electronic transfer of funds is a type of fraud. With the use of technology, stealing of information is much easier. Computers can be used to store stolen information.

5.   Commandment 5

Simply put: Do not contribute to the spread of misinformation using computer technology.

Explanation: Spread of information has become viral today, because of the Internet. This also means that false news or rumors can spread speedily through social networking sites or emails. Being involved in the circulation of incorrect information is unethical. Mails and pop- ups are commonly used to spread the wrong information or give false alerts with the only intent of selling products. Mails from untrusted sources advertising certain products or spreading some hard-to-believe information, are not uncommon. Direct or indirect involvement in the circulation of false information is ethically wrong.

6.   Commandment 6

Simply put: Refrain from copying software or buying pirated copies. Pay for software unless it is free.

Explanation: Like any other artistic or literary work, software is copyrighted. A piece of code is the original work of the individual who created it. It is copyrighted in his name. In case of a developer writing software for the organization he works for, the organization holds the copyright for it. Copyright holds true unless its creators announce it is not. Obtaining illegal copies of copyrighted software is unethical.

7.   Commandment 7

Simply put: Do not use someone else's computer resources unless authorized to.

Explanation: Multi-user systems have user specific passwords. Breaking into some other user's password, thus intruding his private space is unethical. It is not ethical to hack passwords for gaining unauthorized access to a password-protected computer system. Accessing data that you are not authorized to access or gaining access to another user's computer without his permission is not ethical.

8.   Commandment 8

Simply put: It is wrong to claim ownership on a work which is the output of someone else's intellect.

Explanation: Programs developed by a software developer are his/her property. If he is working with an organization, they are the organization's property. Copying them and propagating them in one's own name is unethical. This applies to any creative work, program or design. Establishing ownership on a work which is not yours is ethically wrong.

9.   Commandment 9

Simply put: Before developing a software, think about the social impact it can have.

Explanation: Looking at the social consequences that a program can have, describes a broader perspective of looking at technology. A computer software on release, reaches millions. Software like video games and animations or educational software can have a social impact on their users. When working on animation films or designing video games, for example, it is the programmer's responsibility to understand his target audience/users and the effect it may have on them. For

example, a computer game for kids should not have content that can influence them negatively. Similarly, writing malicious software is ethically wrong. A software developer/development firm should consider the influence their code can have on the society at large.

10.   Commandment 10

Simply put: In using computers for communication, be respectful and courteous with the fellow members.

Explanation: The communication etiquette we follow in the real world applies to communication over computers as well. While communicating over the Internet, one should treat others with respect. One should not intrude others' private space, use abusive language, make false statements or pass irresponsible remarks about others. One should be courteous while communicating over the web and should respect others' time and resources. Also, one should be considerate with a novice computer user.

5.4   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.

<u>By target</u>

- 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

5.5   Engineers as Managers

Engineering Management is a specialized form of management that is concerned with the application of engineering principles to business practice. Engineering management is a career that brings together the technological problem-solving savvy of engineering and the organizational, administrative, and planning abilities of management in order to oversee complex enterprises from conception to completion.

Successful engineering managers typically require training and experience in business and engineering. Technically inept managers tend to be deprived of support by their technical team, and non-commercial managers tend to lack commercial acumen to deliver in a market economy. Largely, engineering managers manage engineers who are driven by non-entrepreneurial thinking, and thus require the necessary people skills to coach, mentor and motivate technical professionals.

Engineering professionals joining manufacturing companies sometimes become engineering managers by default after a period of time. They are required to learn how to manage once they are on the job, though this is usually an ineffective way to develop managerial abilities.

The world today needs creative leadership and technological entrepreneurship. Engineers can make good managers as long as they are willing to continue enhancing their skill-set beyond academic study. On the job, an engineer can develop "a broad understanding and a clear vision of various administrative, financial, and psychological issues," regardless that some people feel an engineering education hinders such learning.

Management skills in which engineers must excel, are

- Ability to deal with uncertainty and ambiguity;
- Possessing effective lateral (functional) thinking and vertical (in-depth) thinking;
- Maintaining a team player's attitude;
- Explaining and persuading;
- Thinking internationally;
- Flexibility;
- Taking reasonable risks and responsibilities;
- Possessing knowledge of foreign values, attitudes and customers;
- Communicating well orally and graphically;
- Using various types of software and hardware; and
- Having a quick grasp of new approaches and ideas.
- Perhaps most important, however, is passion and the ability to lead.

5.6   Consulting Engineers

Consultants are individuals who typically work for themselves but may also be associated with a consulting firm. They, for a fee, gives advice or provides a service in a field of specialized knowledge or training. Most consultants carry their own life and health insurance, pay their own taxes, most have their own tools and equipment. The consultant can work alone or with the client's staff.

Consultants can play a multi-faceted role. They can, for example function as advisors, fixers, bosses, generalists, stabilizers, listeners, advisors, specialists, catalysts, managers or quasi-employees. The actual work that consultants perform for one company to another may vary greatly, i.e. tax account to office decoration. However, the typical underlying reasons that a consultant is hired are universal. A problem exists and the owner or manager of the company has decided to seek the help of an expert.

Bringing in an expert can save time, effort and money. It has been estimated that approximately ¾ of all companies call upon consultants at one time or another. Many companies claim that they receive a higher return for their invested dollars by using consultants for specific tasks.

Most companies have experienced the problem of needing short-term technical expertise. Perhaps the company's existing staff is already working to capacity. In many cases, the engineering skills required for a project can be satisfied with a full time employee. When they cannot fully justify bringing someone on board full time, their answer is to hire a consultant. By doing so, the businessman solves his immediate problem without permanently increasing his payroll and payroll taxes.

Consultants can be hired when the company may not have anyone on staff capable of solving the specific problem. At such times, a costly learning curve on the part of the engineering staff is associated with the project. One example is using a consultant as a viable alternative during the development stages of new products. Hiring a consultant with experience in a given area can then cut days, weeks or even months off a project schedule. In addition, he can help the staff avoid mistakes they may otherwise make. When the project reaches a certain point, the permanent staff can then take over.

Consultants can deal directly with owners and upper management. In this role, consultants can provide an objective third-party view point. Critical objectives can then be identified and advise given in confidence.

Consultants are a viable alternative in assisting in feasibility studies or in proposal preparation. Perhaps the manager cannot justify shifting the duties of existing staff members. Another time that consultants become useful is when a company is just starting a business. The development of the company's new product can be begun by the consultant while a full time permanent technical staff member is being hired.

Finding the right consultant can be difficult. Managers can rely on referrals from their friends or hire the consultant who happens to call at the right time. Once the decision is made to hire a consultant, the need is immediate and one may not have the time to shop for a consultant. As a part of planning ahead, it is wise to meet various consultants on an informal basis before the need to hire one arises. Then when the time comes, you will know exactly who to call for you have already established an informal relationship.

5.7   Engineers as Expert Witnesses and Advisors Expert witness

Unlike fact witnesses whose testimony can only describe personal observations, experience or knowledge, expert witnesses are allowed, even expected, to express opinions about matters in which they have been accepted as having special knowledge that the average person does not possess. Expert witnesses are needed in order to explain the implications of technical evidence because those hearing the evidence will not have the knowledge needed to evaluate it, understand its meaning and apply it to the process of making a decision about the matter at hand.

This decision depends on the application of the following criteria:
(a) relevance;
(b) necessity in assisting the trier of fact;
(c) the absence of any exclusionary rule; and
(d) a properly qualified expert.1

Expert evidence must be given by a witness who is shown to have acquired special or particular knowledge through study or experience in respect of the matters on which he or she undertakes to testify.

Expert witnesses bring expert knowledge to proceedings primarily involving people who do not share that knowledge. The witnesses' objectives go beyond merely answering counsel's questions, to ensuring that the participants to the proceedings, which could be either judge and jury, or chair and panel, adequately understand the technical information or opinion being offered.

An engineering expert witness is a professional engineer who specializes in providing an expert opinion to clients. This person often has clients ranging from law firms to insurance companies. Most experts take on a neutral role when it comes to clients and can work for plaintiffs or defendants.

Some of the incidents that an engineering expert witness investigates for clients include train and automotive engineering defects as well as construction equipment accidents. The engineer may also get requests to review workplace accidents and industrial machinery injuries. One common accident that insurance companies retain these experts for is to figure out liability in slip and fall injuries involving sidewalks, stairs and escalators.

When the engineer expert witness meets with a client, the expert will review the facts of the case and any documentation that may be available. The expert will discuss the incident with the client and tell the client his initial opinion and strategy.

Services that an engineering expert witness can provide include determining the cause of an accident and providing a failure analysis report. Other options that an engineer expert has include creating engineering models and preparing simulations of accidents such as train or vehicle accidents. Sometimes a case may involve a dispute over a warranty on a defective product so the engineer will take a video testing the product and highlight any problems that may occur. Engineers also go to warehouses to inspect buildings, check the building codes and photograph industrial hazards.

An engineering expert witness often gives expert testimony in a court of law. Most experts are willing to testify in court about their findings and assist in trial preparation. The expert will have to submit exhibits such as photographs, videos and written reports. There are different roles the engineer could play in litigation such as expert witness, expert consultant and third-party engineer.

The duties and responsibilities of expert witnesses

The duties and responsibilities of expert witnesses in civil cases include the following:

1) Expert evidence presented to the Court should be, and should be seen to be, the independent product of the expert uninfluenced as to form or content by the exigencies of litigation.

2) An expert witness should provide independent assistance to the Court by way of objective unbiased opinion in relation to matters within his expertise. An expert witness in the High Court should never assume the role of an advocate.

3) An expert witness should state the facts or assumption upon which his opinion is based. He should not omit to consider material facts which could detract from his concluded opinion.

4) An expert witness should make it clear when a particular question or issue falls outside his expertise.

5) If an expert's opinion is not properly researched because he considers that insufficient data is available, then this must be stated with an indication that the opinion is no more than a provisional one. In cases where an expert witness who has prepared a report could not assert that the report contained the truth, the whole truth and nothing but the truth

without some qualification, that qualification should be stated in the report.

6) If, after exchange of reports, an expert witness changes his view on a material matter having read the other side's expert's report or for any other reason, such change of view should be communicated (through legal representatives) to the other side without delay and when appropriate to the Court.

7) Where expert evidence refers to photographs, plans, calculations, analyses, measurements, survey reports or other similar documents, these must be provided to the opposite party at the same time as the exchange of reports.

5.8   Moral Leadership

Moral Reasoning

Ability to analyze right and wrong in terms of abstract principles that reflect the concerns of society as a whole with a focus on maintaining one's self respect.

By definition, Moral leader is someone who leads to serve. He or she could be someone who leads through persuasion, motivation, self-awareness, and the most important of all is **serving people**. What distinguish them from ordinary leaders is that these kinds of leaders prioritize other people's need. But idea like this is too good to be true in today's society.

Some people who bend the course of history through their persuasion without violence. Nelson Mandela who persuades the hearts of many promotes civil rights despite spending 27 years in jail. His determination to promote equal rights in South

Africa proved to be a great success which eventually turns him into an iconic figure.

But different leaders apply different methods of leadership. Leaders nowadays are too corrupted by the power they hold. They take advantage of the power they hold and use it for their own good. Over the course of history, leaders like Hitler, who is a great example, uses his power in desperate times to convince people in anti-Semitic ideas. As a politician, he was a great charismatic man. He can manage to convince people in his mad ideas believing that he can create a better "Germany". His mad ideas was accepted throughout Germany and without a doubt, he eventually rise to power controlling Germany. With Hitler controlling over Germany he lead his people into war, overthrowing everyone else in his way. However, Hitler, with his great leadership skill is missing one piece of a puzzle. That is the morale sense of right or wrong. His ego and mad ideas turned him down, and bringing Germany with him into defeat.

Every moral leader needs good personality. Apart from serving people for their cause, a leader needs to have good communications skills. Communicating with people has always been something difficult to do since different people have different needs and opinions. No matter how good you are as being a leader, someone else would have to disagree with you. Despite that, he or she should have an intellectual control over their follower. Though, no matter what personal qualities he or she possessed, if he lacks of initiative and the will to lead people, he can't be a good leader.

Persuasive and charismatic characters also apply with moral leadership styles. Prioritizing other people's needs rather than using power for themselves makes them different than ordinary leadership style. But above all, ethics is the most influential factors in leadership and decision making. With unselfish approach, they would take all consideration on the table and think how it will affect others. These kinds of leader would be able to understand respect and dignity of others. However, a good leader needs to cooperate and listen to their follower. Without knowing feedback, the leader wouldn't know what areas to develop. Enhancing listening skills could also improve social relationships to the people around.

Moral leadership has actually happen all around us, whether it is in congress or even in school, it has been applied to some of us. Moral leaders are unnecessary to be someone big who is big and famous. Teachers may as well be a great moral leader or even ordinary students. Though, ranks doesn't always guarantee of being a leader. A leader and a boss could be one or two different meanings depending on the personality the person possessed. As describe before, moral leaders are people that we look up to, who guide us to a common cause by using ethical values. A boss could be someone who is in charge of the workplace. They work for monetary purposes and don't always care of their employees. A boss might as well be a moral leader who can motivate and inspire their co-workers and also takes suggestion from the people around them which results to a more enjoyable work space which benefits the company.

But in the end questions still remains: "What is moral leadership?", "should we follow him?" Being a leader is a hard thing to do since you would have a big responsibility for the things that you and your team do. You would need to take critical decision efficiently and be a person who people idolize. One should always take ethical values into account to be a good leader and most important of all, leads to serve. The requirements to be one are high, but leaders are made not born. We could still learn the skills needed to be a great leader because "everyone can be a leader"

Benefits of Moral Leadership

☐ Employee satisfaction, higher morale
☐ Better customer satisfaction
☐ Employee retention
☐ Enhanced workplace trust
☐ Cooperation
☐ Innovation
☐ Money is saved from costs associated with misconduct and surveillance to prevent it

5.9   Codes of Conduct

Code of ethics is a frame work for arriving at good ethical choices. But any how this is not merely a recipe for ethical behaviour. The code of ethics establishes a frame work for ethical judgement for any profession. Even then the code of ethics cannot be considered as a substitute for a sound judgement. A code of ethics does not develop new moral principles. Rather, it states the ways in which moral and ethical principles apply to any professional practice. It creates an environment within a profession when ethical behaviour is the basic criterion and condition. It guides or reminds how to act in any specific situation. Moreover these codes support any individual who is being pressurized or tortured by a superior to behave unethically or those who are accusing their employers of unethical conduct. This indicates that there is a collective sense of correct behaviour and that the profession is seriously concerned with certain responsibilities.

Code of Engineering Societies

Code of Engineering societies began to be organized in 19th century in United States and later some more new societies had been developed as and when new engineering fields are developed in the country. Later as these societies developed and strengthened themselves, many of them framed code of ethics for practicing engineers. They spelled out the duties of the engineers towards their employers. But later codes emphasize the commitment to safety, public health, and environmental protection as the main duties of the engineers.

Many other organizations like Ethical use of computers, Student organizations in Universities have also framed their own codes of ethics. But as most of the practicing engineers are not members of professional organizations, they are in need of certain ethical guidelines for their routine work. So many corporations have also adopted the codes of ethics suitable to their business and profession. But such corporations can easily fabricate such codes, as a tailor-made one, on policies,

pertaining to the individual circumstances and specific mission of the company. But these codes seem to be relatively lengthy with more details.

They mainly narrate in detail the policies of the company, business practices, and relationship with suppliers and with government agencies, health and safety issues, environmental protection, equal employment opportunity and affirmative action, diversity and

racial tolerance and compliance with government regulations. These codes of conduct help in employee's awareness of ethical issues and establish a strong corporate ethical culture. These codes provide the employee ready access to guide the corporation with relevance to their policies.

Code of ethics for Engineers

National Society of Professional Engineers framed the code of ethics for engineers. The professional realized that their work has a direct impact on the quality of life of all the people. So, the services by the Engineers need honesty, fairness and must be a dedicated one for the Society. In this regard many number of Professional societies implement their own codes. All societies have some common features .

5.10   Corporate Social Responsibility

Corporate Social Responsibility (or CSR as we will call it throughout this book) is a concept which has become dominant in business reporting. Every corporation has a policy concerning CSR and produces a report annually detailing its activity.

The broadest definition of corporate social responsibility is concerned with what is – or should be – the relationship between global corporations, governments of countries and individual citizens. More locally the definition is concerned with the relationship between a corporation and the local society in which it resides or operates. Another definition is concerned with the relationship between a corporation and its stakeholders.

For us all of these definitions are pertinent and each represents a dimension of the issue. A parallel debate is taking place in the arena of ethics – should corporations be controlled through increased regulation or has the ethical base of citizenship been lost and needs replacing before socially responsible behaviour will ensue? However this debate is represented it seems that it is concerned with some sort of social contract between corporations and society.