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SCHOOL OF COMPUTING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

UNIT – 5 – PRINCIPLES OF MANAGEMENT AND PROFESSIONAL ETHICS

UNIT 5 VALUES AND ETHICS: Human Values – Natural acceptance - Ethics – Definition- Objectives - Virtues – Challenges in the work place - Engineering ethics - Scope - Moral issues and judgment - Moral development theories – Engineers as responsible experimenters - Codes of ethics - Industrial standards - Global Issues: Environmental ethics- Computer ethics - Ethics and codes of business conduct in MNC.

Human Values

Definition

Humans have the unique ability to define their identity, choose their values and establish their beliefs.

All three of these directly influence a person's behavior. People have gone to great lengths to demonstrate the validity of their beliefs, including war and sacrificing their own life! Conversely, people are not motivated to support or validate the beliefs of another, when those beliefs are contrary to their own.

People will act congruent with their personal values or what they deem to be important.

A value is defined as a principle that promotes well-being or prevents harm." Another definition is: Values are our guidelines for our success—our paradigm about what is acceptable." Personal values are defined as: "Emotional beliefs in principles regarded as particularly favorable or important for the individual." Our values associate emotions to our experiences and guide our choices, decisions and actions.

A person's observations on its environment are filtered through his values to determine whether or not he should expend energy to do something about his experiences. A person who values gold and sees a large bag of gold (a positive value) in his path as he walks, will be motivated to reach down and pick it up. A person who values his life and knows about venomous snakes will retreat from the sound of a rattlesnake (a negative value) from nearby, when he is walking in the desert. Said in another way, "Values are the scales we use to weigh our choices for our actions, whether to move towards or away from something."

Not all values have the same weight or priority. Some are more important than others and must be satisfied before others can be addressed. Dr. Abraham Maslow illustrated this with his hierarchy of human needs. Survival has a higher priority than security, which has a higher priority than social acceptance. Self-esteem can only be addressed to the degree that social acceptance is fulfilled. Similarly, self-actualization can only be pursued to the degree that self-esteem has been satisfied.

A person's beliefs, values and identity are usually acquired unconsciously based on his personal experience or observations of others' experiences as to what produces desirable or undesirable results in the environment. A baby's learning to walk and talk is a clear example of identifying with human adults, valuing the act of being able to have the mobility and communication ability of an adult and the belief, based on unconscious observation, that humans can do walk and do talk with each other.

Physiologists have identified the parts of the human brain that are involved in producing behavior in accordance with beliefs and values. All information collected by human senses is passed through a net-like group of cells, known as the Reticular Activating System (RAS), located near the top of the brain stem. The RAS compares the data received with accepted values, positive and negative (threats), and beliefs stored in memory and determines whether or not immediate action is required. The results of the RAS's comparison are communicated to the 'amygdala' near the mid-brain.

The 'amygdala' produces neuro-chemicals that cause emotions consistent with the nature of and proportional to the match between environment and values and beliefs. The neuro-chemicals initiate the chemical processes needed for the action to be taken. If the emotions produced are strong enough, the perceived information is blocked from reaching the logical, rational and conscious executive center

of the brain, the pre-frontal lobes. In which case, the resulting behavior will be automatic, not necessarily logical or rational, and completely in accordance with the person's strongest held beliefs, values and/or identity.

By positive affirmations, one can modify or create new beliefs about a person's identity and/or what is important to him (values). Verbal repetition of statements intended to become new beliefs, and values will result in these being stored for use by the RAS for comparison with the environment being experienced. This is the mechanism how the beliefs or values are modified.

Types of Values

The five core human values are:

(1) Right conduct,

(2) Peace,

(3) Truth,

(4) Love, and

(5) Nonviolence.

1. Values related to RIGHT CONDUCT are:

(a) SELF-HELP SKILLS: Care of possessions, diet, hygiene, modesty, posture, self-reliance, and tidy appearance
(b) SOCIAL SKILLS: Good behavior, good manners, good relationships, helpfulness, No wastage, and good environment, and
(c) ETHICAL SKILLS: Code of conduct, courage, dependability, duty, efficiency, ingenuity, initiative, perseverance, punctuality, resourcefulness, respect for all, andresponsibility
2. Values related to PEACE are: Attention, calmness, concentration, contentment,dignity, discipline, equality, equanimity, faithfulness, focus, gratitude, happiness, harmony, humility, inner silence, optimism, patience, reflection, satisfaction, self- acceptance, self-confidence, self- control, self-discipline, self-esteem, self-respect,sense control, tolerance, and understanding
3. Values related to TRUTH are: Accuracy, curiosity, discernment, fairness, fearlessness, honesty, integrity (unity of thought, word, and deed), intuition, justice, optimism, purity, quest for knowledge, reason, self-analysis, sincerity, sprit of enquiry, synthesis, trust, truthfulness, and determination.
4. Values related to LOVE are: Acceptance, affection, care, compassion, consideration, dedication, devotion, empathy, forbearance, forgiveness, friendship, generosity, gentleness, humanness, interdependence, kindness, patience, patriotism, reverence, sacrifice, selflessness, service, sharing, sympathy, thoughtfulness, tolerance and trust
5. Values related to NON-VIOLENCE are:
(a) PSYCHOLOGICAL: Benevolence, compassion, concern for others, consideration, forbearance, forgiveness, manners, happiness, loyalty, morality, anduniversal love
(b) SOCIAL: Appreciation of other cultures and religions, brotherhood, care of environment, citizenship, equality, harmlessness, national awareness, perseverance, respect for property, and social justice.

PERSEVERANCE is defined as persistence, determination, resolution, tenacity, dedication, commitment, constancy, steadfastness, stamina, endurance and indefatigability. To persevere is described as to continue, carry on, stick at it (in formal), keep going, persist, plug away, (informal), remain, stand firm, stand fast, hold on and hang on. Perseverance builds character.

ACCURACY means freedom from mistake or error; conformity to truth or to a standard or model and exactness. Accuracy is defined as correctness, exactness, authenticity, truth, veracity, closeness to truth (true value) and carefulness. The value of accuracy embraces a large area and has many implications. Engineers areencouraged to demonstrate accuracy in their behavior through the medium of praiseand other incentives. Accuracy includes telling the truth, not exaggerating, and taking care over one's work.

DISCERNMENT means discrimination, perception, penetration, and insight. Discernment means the power to see what is not obvious to the average mind. It stresses accuracy, especially in reading character or motives. Discrimination stresses the power to distinguish or select what is true or genuinely excellent. Perception implies quick and often sympathetic discernment, as of shades of feelings.

Penetration implies a searching mind that goes beyond what is obvious or superficial. Insight suggest depth of discernment.

Natural acceptance

Natural acceptance implies unconditional and total acceptance of the self, people and environment. It also refers to the absence of any exception from others. Once we fully and truly commit ourselves on thebasis of natural acceptance, we feel a holistic sense of inner harmony, tranquility and fulfillment. Actually naturalacceptance is way to accept the good things naturally. Learn everything that is good from others, but bring it in, and in our ownway absorb it; do not become others. We can easily verify proposals in the basis of characteristics of naturalacceptance mentioned below:

a. Natural acceptance does not change with time. It remains invariant with time. For example our natural acceptance for trust and respect does not change with age.

b. It does not depend on the place. Whatever we have accepted, in our life, at any time of our age, does not change, even if we move from one place to another one.

c. It does not depend on our beliefs or past conditionings. No matter how deep our belief or past conditioning, as long as we ask ourselves the question sincerely, as long as we refer deep within ourselves, the answer will always be the same.

d. This natural acceptance is 'constantly there', something we can refer to. Natural acceptance is always there. Whatever we do, this natural acceptance is within us, it is telling us what is right.

e. Natural acceptance is the same for al of us: it is part and parcel of every human being, it is part of humanness. Though each one of us, may have different likes and dislikes and means to live and to react etc. But if we go deep in our mind the

MEANING OF ETHICS

Ethics is the study of moral values and moral behaviour. Ethical behaviour is acting in ways consistent with one's personal values and the commonly held values of the organization and society. Ethical issues are a major concern in organizations. There is evidence that paying attention to ethical issues pays off for companies. Doing the right thing can positively affect an organization's performance. Managers must confront the ethical challenges that are encountered in organizations.

Some organizations manage ethical issues well. Despite the positive way some organizations handle ethical issues, there is plenty of evidence that unethical conduct does occur in other organizations. How can people in organizations rationally think through ethical decisions so that they make the "right" choice? Ethical theories give us a basis for understanding, evaluating, and classifying moral arguments and then defending conclusions about what is right and wrong.

Importance of Values And Ethics in Business

Ethics is important not only in business but in all aspects of life because it is the vital part and the foundation on which the society is build. A business/society that lacks ethical principles is bound to fail sooner or later. According to International Ethical Business Registry, "there has been a dramatic increase in the ethical expectation of businesses and professionals over the past 10 years. Increasingly, customers, clients and employees are deliberately seeking out those who define the basic ground, rules of their operations on a day today…." Ethics refers to a code of conduct that guides an individual in dealing with others. Business Ethics is a form of the art of applied ethics that examines ethical principles and moral or ethical problems that can arise in business environment. It deals with issues regarding the moral and ethical rights, duties and corporate governance between a company and its shareholders, employees, customers, media, government, suppliers and dealers.

Henry Ford said, "Business that makes noting but money is a poor kind of business". Ethics is related to all disciplines of management like accounting information, human resource management, sales and marketing, production, intellectual property knowledge and skill, international business and economic system. As said by Joe Paterno once that success without honor is an unseasoned dish. It will satisfy your hunger, but won't taste good. In business world the organization's culture sets standards for determining the difference between good or bad, right or wrong, fair or unfair. "It is perfectly possible to make a decent living without compromising the integrity of the company or the individual, wrote business executive R. Holland, "Quite apart from the issues of rightness and wrongness, the fact is that ethical behavior in business serves the individual and the enterprise much better in long run.", he added. Some management guru stressed that ethical companies have an advantage over their competitors. Said Cohen and Greenfield, "Consumers are used to buying products despite how they feel about the company that sells them. But a valued company earned a kind of customer loyalty most corporations only dream of because it appeals to its customers more than a product".

The ethical issues in business have become more complicated because of the global and diversified nature of many large corporation and because of the complexity of economic, social, global, natural, political, legal and government regulations and environment, hence the company must decide whether to adhere to constant ethical principles or to adjust to domestic standards and culture. Managers have to remember that leading by example is the first step in fostering a culture of ethical behavior in the companies as rightly said by Robert Noyce, "If ethics are poor at the top, that behavior is copied down through the organization", however the other methods can be creating a common interest by favorable corporate culture, setting high standards, norms, framing attitudes for acceptable behavior, making written code of ethics implicable at all levels from top to bottom, deciding the policies for recruiting, selecting, training, induction, promotion, monetary / nonmonetary motivation, remuneration and retention of employees. "Price is what you pay. Value is what you get" – Warren Buffet. Thus, a manager should treat his employees, customers, shareholders, government, media and society in an honest and fair way by knowing the difference between right or wrong and choosing what is right, this is the foundation of ethical decision making. REMEMBER: GOOD ETHICS IS GOOD BUSINESS. "Non-corporation with the evil is as much a duty as is cooperation with good" – Mahatma Gandhi.

Values and ethics in simple words mean principle or code of conduct that govern transactions; in this case business transaction. These ethics are meant to analyze problems that come up in day to day course of business operations. Apart from this it also applies to individuals who work in organizations, their conduct and to the organizations as a whole. We live in an era of cut throat competition and competition breeds enmity. This enmity reflects in business operations, code of conduct. Business houses with deeper pockets crush small operators and markets are monopolised. In such a scenario certain standards are required to govern how organizations go about their business operations, these standards are called ethics.

Business ethics is a wider term that includes many other sub ethics that are relevant to the respective field. For example there is marketing ethics for marketing, ethics in HR for Human resource department and the like. Business ethics in itself is a part of applied ethics; the latter takes care of ethical questions in the technical, social, legal and business ethics.

Origin of Business Ethics

When we trace the origin of business ethics we start with a period where profit maximization was seen as the only purpose of existence for a business. There was no consideration whatsoever for non-economic values, be it the people who worked with organizations or the society that allowed the business to flourish. It was only in late 1980's and 1990's that both intelligentsia and the academics as well as the corporate began to show interest in the same. Nowadays almost all organizations lay due emphasis on their responsibilities towards the society and the nature and they call it by different names like corporate social responsibility, corporate governance or social responsibility charter. In India Maruti Suzuki, for example, owned the responsibility of maintain a large number of parks and ensuring greenery. Hindustan Unilever similarly started the e-shakti initiative for women in rural villages. Globally also many corporations have bred philanthropists who have contributed compassion, love for poor and unprivileged. Bill Gates of Microsoft and Warren Buffet of Berkshire Hathaway are known for their philanthropic contributions across globe.

Many organizations, for example, IBM as part of their corporate social responsibility have taken up the initiative of going green, towards contributing to environmental protection. It is not that business did not function before the advent of business ethics; but there is a regulation of kinds now that ensures business and organizations contribute to the society and its well being. **Nowadays business ethics determines the fundamental purpose of existence of a company in many organizations.** There is an ensuing battle between various groups, for example between those who consider profit or shareholder wealth maximization as the main aim of the company and those who consider value creation as main purpose of the organisation.

The former argue that if an organizations main objective is to increase the shareholders wealth, then considering the rights or interests of any other group is unethical. The latter, similarly argue that profit maximization cannot be at the expense of the environment and other groups in the society that contribute to the well being of the business. Nevertheless business ethics continues to a debatable topic. Many argue that lots of organizations use it to seek competitive advantage and creating a fair image in the eyes of consumers and other stakeholders. There are advantages also like transparency and accountability.

SOURCES OF BUSINESS ETHICS

Ethics in general refers to a system of good and bad, moral and immoral, fair and unfair. It is a code of conduct that is supposed to align behaviors within an organization and the social framework. But the question that remains is, where and when did business ethics come into being? Primarily ethics in business is affected by three sources - culture, religion and laws of the state. It is for this reason we do not have uniform or completely similar standards across the globe. These three factors exert influences to varying degrees on humans which ultimately get reflected in the ethics of the organization. For example, ethics followed by Infosys are different than those followed by Reliance Industries or by Tata group for that matter. Again ethical procedures vary across geographic boundaries.

Religion

It is one of the oldest foundations of ethical standards. Religion wields varying influences across various sects of people. It is believed that ethics is a manifestation of the divine and so it draws a line between the good and the bad in the society. Depending upon the degree of religious influence we have different sects of people; we have sects, those who are referred to as orthodox or fundamentalists and those who are called as moderates. Needless to mention, religion exerts itself to a greater degree among the orthodox and to lesser extent in case of moderates. Fundamentally however all the religions operate on the principle of reciprocity towards ones fellow beings!

Culture

Culture is a pattern of behaviors and values that are transferred from one generation to another, those that are considered as ideal or within the acceptable limits. No wonder therefore that it is the culture that predominantly determines what is wrong and what is right. It is the culture that defines certain behavior as acceptable and others as unacceptable. Human civilization in fact has passed through various cultures, wherein the moral code was redrafted depending upon the epoch that was. What was immoral or unacceptable in certain culture became acceptable later on and vice versa. During the early years of human development where ones who were the strongest were the ones who survived! Violence, hostility and ferocity were thus the acceptable. Approximately 10,000 year ago when human civilization entered the settlement phase, hard work, patience and peace were seen as virtues and the earlier ones were considered otherwise. These values are still pt in practice by the managers of today. Still further, when human civilization witnessed the industrial revolution, the ethics of agrarian economy was replaced by the law pertaining to technology, property rights etc. Ever since a tussle has ensued between the values of the agrarian and the industrial economy!

Law

Laws are procedures and code of conduct that are laid down by the legal system of the state. They are meant to guide human behavior within the social fabric. The major problem with the law is that all the ethical expectations cannot be covered by the law and specially with ever changing outer environment the law keeps on changing but often fails to keep pace. In business, complying with the rule of law is taken as ethical behavior, but organizations often break laws by evading taxes, compromising on quality, service norms etc.

Most of us would agree that it is ethics in practice that makes sense; just having it carefully drafted and redrafted in books may not serve the purpose. Of course all of us want businesses to be fair, clean and beneficial to the society. For that to happen, organizations need to abide by ethics or rule of law, engage themselves in fair practices and competition; all of which will benefit the consumer, the society and organization.

Primarily it is the individual, the consumer, the employee or the human social unit of the society who benefits from ethics. In addition ethics is important because of the following:

1. **Satisfying Basic Human Needs:** Being fair, honest and ethical is one the basic human needs. Every employee desires to be such himself and to work for an organization that is fair and ethical in its practices.

2. **Creating Credibility:** An organization that is believed to be driven by moral values is respected in the society even by those who may have no information about the working and the businesses or an organization. Infosys, for example is perceived as an organization for good corporate governance and social responsibility initiatives. This perception is held far and wide even by those who do not even know what business the organization is into.

3. **Uniting People and Leadership:** An organization driven by values is revered by its employees also. They are the common thread that brings the employees and the decision makers on a common platform. This goes a long way in aligning behaviors within the organization towards achievement of one common goal or mission.

4. **Improving Decision Making:** A man's destiny is the sum total of all the decisions that he/she takes in course of his life. The same holds true for organizations. Decisions are driven by values. For example an organization that does not value competition will be fierce in its operations aiming to wipe out its competitors and establish a monopoly in the market.

5. **Long Term Gains:** Organizations guided by ethics and values are profitable in the long run, though in the short run they may seem to lose money. Tata group, one of the largest business conglomerates in India was seen on the verge of decline at the beginning of 1990's, which soon turned out to be otherwise. The same company's Tata NANO car was predicted as a failure, and failed to do well but the same is picking up fast now.

6. Securing the Society: Often ethics succeeds law in safeguarding the society. The law machinery is often found acting as a mute spectator, unable to save the society and the environment. Technology, for example is growing at such a fast pace that the by the time law comes up with a regulation we have a newer technology with new threats replacing the older one. Lawyers and public interest litigations may not help a great deal but ethics can.

Ethics tries to create a sense of right and wrong in the organizations and often when the law fails, it is the ethics that may stop organizations from harming the society or environment.

Importance of Ethics in Management

Ethical behavior among managers is even more important in organizations because leaders set the moral tone of the organization and serve as role models. Ethical leaders build trust in organizations. If employees see leaders behaving unethically, chances are the employees may be less inclined to behave ethically themselves. Companies may have printed codes of ethics, but the key standard is whether leaders uphold those values and standards. We tend to watch leaders for cues on appropriate actions and behavior that the company expects. Decisions that managers make are an indicator of their ethics. If the company says it cares about the safety of employees but then does not buy enough protective gear for them, it is not behaving in line with its code. Likewise, if managers exhibit unsafe behavior or look the other way when employees act unsafely, their behavior is not aligned with their stated code.

Without integrity, there can be no trust. Leadership is based on trust. Ethics drive effectiveness because employees know they can do the right thing decisively and with confidence. Ethical behavior earns the trust of customers and suppliers as well. It earns the public's good will. Ethical managers and ethical businesses tend to be more trusted and better treated. They suffer less resentment, inefficiency, litigation, and government interference. If top management cuts corners, however, or if they make shady decisions, then no matter how good the code of ethics sounds, people will emulate the questionable behavior, not the code. As a manager, you can make it clear to employees that you expect them to conduct business in an ethical manner by offering seminars on ethics, having an ethics hotline via which employees can anonymously raise issues, and having an ombudsman office or ethics committee to investigate issues.

Virtues

Virtues are attitudes, dispositions, or character traits that enable us to be and to act in ways that develop this potential. They enable us to pursue the ideals we have adopted. Honesty, courage, compassion, generosity, fidelity, integrity, fairness, self-control, and prudence are all examples of virtues.

Virtues are developed through learning and through practice. As the ancient philosopher Aristotle suggested, a person can improve his or her character by practicing self-discipline, while a good character can be corrupted by repeated self-indulgence. Just as the ability to run a marathon develops through much training and practice, so too does our capacity to be fair, to be courageous, or to be compassionate.

Virtues are habits. That is, once they are acquired, they become characteristic of a person. For example, a person who has developed the virtue of generosity is often referred to as a generous person because he or she tends to be generous in all circumstances. Moreover, a person who has developed virtues will be naturally disposed to act in ways that are consistent with moral principles. The virtuous person is the ethical person.

At the heart of the virtue approach to ethics is the idea of "community". A person's character traits are not developed in isolation, but within and by the communities to which he or she belongs, including family, church, school, and other private and public associations. As people grow and mature, their personalities are deeply affected by the values that their communities prize, by the personality traits that their communities encourage, and by the role models that their communities put forth for imitation through traditional stories, fiction, movies, television, and so on. The virtue approach urges us to pay attention to the contours of our communities and the habits of character they encourage and instill.

The moral life, then, is not simply a matter of following moral rules and of learning to apply them to specific situations. The moral life is also a matter of trying to determine the kind of people we should be

and of attending to the development of character within our communities and ourselves.

Challenges in the workplace

Whether you are new to the workplace or a seasoned employee, problems occur at work. The following are some workplace challenges and how to deal with them.

New to the Workplace Fitting In

Figuring out how to be part of a new work culture can at times be frustrating. Get to know your coworkers by working on team projects. This promotes common interests, builds trust, and allies. Ask questions if you don't understand something. Be friendly and respectful. Your good attitude, manners, and work habits will show that you are a professional. Don't contribute to office gossip.

Being Heard

It takes time to gain the trust of coworkers to get them on board with your ideas. Listen and observe before suggesting changes. Bring solutions to the table. Engage your coworkers by knowing what you are talking about. Build a reputation of being clear-headed, objective, and reasonable.

Making Mistakes

They happen to everyone at some point. Admit them and apologize. Don't offer excuses or try to cover them up. Instead, offer solutions as soon as possible and fix the problem on your own time. Forgive yourself, and move on.

Time Management

It can be difficult when you're settling into a new job and adjusting to your new responsibilities. Create a daily "to do" or goals list. Breaking down your tasks will make them seem more manageable, keep you organized, and help you to be more productive and efficient. If you are still having difficulty managing your workload, ask a coworker for advice, or speak with your supervisor to prioritize your work.

Problems with Coworkers

Slackers

Slackers lower productivity. If a coworker's poor work habits are affecting your job performance, explain respectfully to them how their behavior is affecting you and what you would like to see changed. But keep in mind that it is your (or the coworker's) supervisor's responsibility to deal with problem workplace behavior. Unless this person has authority to delegate work to you, you can say "no" to their requests to do their work. Concentrate on being a good employee. Don't fall into their poor work routine.

Disagreeable Coworkers

They create an unpleasant work situation. Avoid them if possible, be pleasant when you have to work with them, and stand up to them when necessary. Even if they need to be dealt with, don't get into a fight with them. Talk with them calmly, in private, about how their behavior makes you feel. Avoid involving your supervisor unless it's absolutely necessary.

Office Bullies

They cause anxiety and stress. And they often target those they see as a threat. Don't let them isolate you or make you feel bad about yourself. Stand up for yourself. Never sink to their level. Discuss the problem with a mentor to find the best way to handle them. If they are threatening you, report it to your supervisor.

Gossipers and Trouble Makers

They can be especially disruptive to the workplace and cause misunderstandings. Be friendly, but act busy and they will get the message that you have better things to do. While this person can serve as your ears to the office grapevine and workplace dynamics, don't comment or add fuel to their behavior.

Whiners and Complainers

They tend to see the negative side to everything. This attitude can be harmful to morale. Be empathetic, but put the problem back on them. Ask them what they intend to do about solving it. Complaining may be their attempt to avoid conflict, relieve stress about things they feel they have no control over, or simply to get attention. Do not try to solve their problem for them. Do not turn their complaints into office gossip either.

Saboteurs and Backstabbers

They cause distrust by spreading rumors or withholding important information from those they see as rivals. This can affect your career goals and reputation. Confront them calmly about their behavior. Do not play their game. When you have a good idea or assisted on a project, tell your supervisor so you get the credit you deserve. If someone is trying to make you look bad, check in regularly with your supervisor on your job performance.

Workplace Ethics and Integrity Issues

Poor business and workplace ethics can be hazardous to your job security. It can cause people to lose respect for you and follow you for the rest of your career. Stay clear of those who ask you to compromise your integrity. Say "no" to requests that make you feel uncomfortable. Review your employer's workplace ethics and proper business ethics. In some cases, these issues need to be reported to your supervisor, human resources, or legal representatives.

Getting Along with Your Boss

Problems with a boss are emotionally and physically draining. They can often stem from work style or personality differences. The first step is to figure out what specifically they are doing that is upsetting you. Then ask yourself why. It helps to look at the problem from both your perspective AND your supervisor's. Next, decide how best to discuss it with them. Avoid blaming, accusing, or venting. Try to use the "we" approach:

"WE seem to be missing deadlines because tasks aren't started on time. How can WE fix this?"

Offer a solution that will help the both of you meet your goals and look good. If the problem can't be resolved, contact their supervisor and human resources for assistance.

Dealing with Harassment or Discrimination

Harassment and discrimination are illegal and come in many forms. You do not have to put up with it. Ask the person to stop, and don't put yourself in compromising situations. If you feel unsafe or need help, report it to your supervisor and human resources. Keep a detailed log of the other person's behavior. The Equal Employment Opportunity Commission can also offer assistance with these issues. In some cases, you may require legal assistance.

Workplace Bullying

Bullying in the workplace can include anything from condescending behavior and gossiping to exclusion or violence. Both coworkers and bosses can be bullies. If you are being bullied at work, you are not alone. You didn't cause this to happen and have options for how to handle the situation:

Try to deal with it yourself by confronting the bully in a calm, confident manner. Tell the bully that their comments or actions are offensive and give them an opportunity to correct his or her behavior.

Prepare for consequences. Bullying often escalates once they are exposed.

Make sure your superiors are aware of your good work. Bullies often try to spread the word

that you aren't doing your job well.

Avoid situations where bullying is most likely to occur. Unfortunately, bullying cases are often hard to prove through legal action. You may choose to leave the hostile environment instead.

Fear of dismissal or retaliation keeps many employees from reporting bullying to their employers. Some employers dismiss the bullying as a personality conflict. Keep a detailed log of thebully's behavior and speak with someone in human resources or within the company that you trust.

Advancement Concerns

Being Passed Over for Promotion

It never feels good to be turned down for something, but be gracious about the news. Don't complain to others. Request a meeting with your supervisor to find out why and what you can do differently to gain a promotion. Below are a few other things you can do to help you get that next promotion:

Document your past successes and practice self-promotion so that your coworkers and networking contacts know about your accomplishments.

Acquire new knowledge and skills or update your current ones to keep yourself up to date and marketable.

Show initiative and leadership by actively look for ways to improve your company.Be

proactive and ask for more projects and responsibilities.

Find a person higher up in your company to serve as your mentor.

Be on good terms with your boss, and let him or her know you are interested in moving up.Volunteer to

work on teams.

Network with people inside and outside your company.

Glass Ceiling

If you feel like you have advanced as far as you can go with your present employer, you have probably reached what is called the "glass ceiling." You can see through that ceiling to the next career level, but you can't seem to reach it. In addition to working toward any promotion (see above), there are ways to combat the glass ceiling:

Prove your value to your employer and identify which traits and skills they are looking for when they promote people.

Discuss your career goals with your supervisor and how to accomplish them.

Nurture your relationships with other people where you work.

Pigeon-Holed

This means you have been categorized as someone who is skilled in only certain areas and not considered for any other type of work. This prevents you from moving up or in a new career direction. When this happens, you may feel stuck in your present role at work. Taking the following steps can help:

Speak with your supervisor about the issue to find out why you are parked in your present position. Express your desire to do something different.

Volunteer to take on new responsibilities and projects to prove you can do other things. This will increase your value and visibility.

Get some additional training if necessary.

Train a replacement for yourself so management won't feel they are losing the only person that can do your job well.

Looking for Other Work

Before you make a hasty decision to quit (especially in a tight job market), try to make your current job work. Pinpoint the problem, change your routine, take on more responsibility, or pursue an interest outside of work. Speak to your supervisor about ways to add challenge to your current position.

If the issues can't be resolved, then it may be time to look for a new job. This can be tricky if you are still employed. Do your job search on your own time. Network with those you trust to be discreet, and set job search goals for yourself. If possible, schedule interviews before or after work. Choose an employer that will help you achieve your career and personal goals. When you find a new job, give your current employer ample notice that you are taking another position, and don't burn bridges.

Engineering Ethics

Engineering is the process of developing an efficient mechanism which quickens and eases the work using limited resources, with the help of technology. Ethics are the principles accepted by the society, which also equate to the moral standards of human beings. An engineer with ethics, can help the society in a better way.

Hence the study of Engineering ethics, where such ethics are implemented in engineering by the engineers, is necessary for the good of the society. Engineering Ethics is the study of decisions, policies and values that are morally desirable in engineering practice and research.

Morals

The word "Morality" originates from the Latin word "mos" meaning "custom". Morals are the principles or habits with respect to right or wrong of one's own conduct. They are not imposed by anyone. Morals are what you think is good and bad personally.

Though morals are not imposed, they can be understood as the preaching of our inner self. Depending on a few factors, our mind filters things as good or bad. These are the ideas that help frame our personality so that we can distinguish between what is right and what is wrong.

A moral is the code of conduct that you develop over time and set for yourself to follow, just like

Being good to everyone

Speaking only the truth

Going against what you know is wrong

Having chastity

Avoid cheating

Being a nice human being etc.

Morals are always defined by one's own personality. Morals can be changed according to one's beliefs as they are completely dependent on one's perception towards the ethical values.

Ethics

The word "Ethics" originates from the Greek word "ethos" meaning "character". Ethics are a set of rules or principles that are generally considered as standards or good and bad or right and wrong, which are usually imposed by an external group or a society or a profession or so.

Ethics can be understood as the rules of conduct proposed by a society or recognized with respect to a particular class of human actions or a particular group or culture. Ethics are dependent on others definition. They may or may not vary from context to context.

A person who strictly follows a set of ethical principles, may not have any moral at all while a person who violates ethical principles at times, may maintain a high moral integrity. The ethical theories include duty ethics, right ethics, virtue ethics and so on. A best example that can explain ethics is utilitarianism.

Utilitarianism is the philosophy which explains that the happiness or pleasure of a greatest number of people in the society is considered as the greatest good. According to this philosophy, an action is morally right if its consequences leads to happiness of the people and wrong if the action leads to their unhappiness. This theory moves beyond the scope of one's own interests and takes into account the interests of others.

Ethics in Engineering

Ethics are principles followed depending upon the moral responsibility that a person feels. The study of related questions about moral ideals, character, policies and relationships of people and organizations involved in technological activity, can be termed as Engineering ethics.

An engineer whether he works individually or works for a company, has to go through some ethical issues, mostly under the conditions such as, conceptualization of a product, issues arising in design and testing departments, or may be on the issues involving the manufacturing, sales and services. Questions related to morality also arise during supervision and team works.

The ethical decisions and moral values of an engineer need to be considered because the decisions of an engineer have an impact the products and services – how safe they are to use, the company and its shareholders who believe in the goodwill of the company, the public and the society who trusts the company regarding the benefits of the people, the law which cares about how legislation affects the profession and industry, the job and his moral responsibilities and about how the environment gets affected, etc.

Moral issues and judgement

Not only an engineer, but everyone has to follow a set of morals in order to keep away from getting morally degraded. Our behavior should include the following –

Respecting others and ourselves.

Respecting the rights of others.

Keeping promises.

Avoiding unnecessary problems to others.

Avoiding cheating and dishonesty.

Showing gratitude towards others and encourage them to work.

Morality commands respect for persons, both others and ourselves. It involves being fair and just, meeting obligations and respecting rights and not causing unnecessary harm by dishonesty and cruelty or by hubris.

Steps to Deal with Issues

Whenever there occurs an issue, one should possess a few skills in order to sort out the problem. The issues that engineers face, have to be dealt with patience and few moral goals have to be kept in mind while dealing with such issues. They are as follows –

Moral Awareness – One should be able to recognize the moral problems and issues that occur in Engineering. The analysis on the problem is necessary in order to differentiate and judge according to ethics or according to the rules to follow.

Cogent Moral Reasoning – In order to come to a conclusion on an issue, the argument has to be assessed and comprehended. The argument on both sides has to be considered with all the probabilities and the nature of the argument should be logical and moral.

Moral Coherence – After having gone through all the logical and moral facts, consistent and comprehensive view points are to be formed based upon a consideration of relevant facts.

Moral Imagination – The moral issues and the practical issues have to be dealt separately. Alternative responses are to be found out for dealing with moral issues while creative solutions should be found out for practical difficulties.

Moral Communication – The language to communicate about one's moral views should be so precise and clear, that the expression or words should not alter the original meaning.

Theories of Moral Development

Piaget's Theory of Moral Development

To understand adult morality, Piaget believed that it was necessary to study both how morality manifests in the child's world as well as the factors that contribute to the emergence of central moral concepts such as welfare, justice, and rights. By interviewing children, Piaget (1965) found that young children were focused on authority mandates and that with age, children become autonomous, evaluating actions from a set of independent principles of morality.

He developed two phases of moral development, one common among children and the other common among adults.

Heteronomous Phase

The first is the Heteronomous Phase. This phase, more common among children, is characterized by the idea that rules come from authority figures in one's life, such as parents, teachers, and God. It also involves the idea that rules are permanent no matter what. Thirdly, this phase of moral development includes the belief that "naughty" behavior must always be punished and that the punishment will be proportional. This absolutism in moral development is seen in children's play from the age of 5, where they exhibit a blind belief in the rules and ideas of right and wrong passed to them by their elders.

Autonomous Phase

The second phase in Piaget's theory of moral development is referred to as the Autonomous Phase. This phase is more common after one has matured and is no longer a child. In this phase, people begin to view the intentions behind actions as more important than their consequences. For instance, if a person who is driving swerves in order to not hit a dog and then knocks over a road sign, adults are likely to be less angry at the person than if he or she had done it on purpose just for fun. Even though the outcome is the same, people are more forgiving because of the good intention of saving the dog. This phase also includes the idea that people have different morals and that morality is not necessarily universal. People in the Autonomous Phase also believe rules may be broken under certain circumstances. For instance, Rosa Parks broke the law by refusing to give up her seat on a bus, which was against the law but something many people consider moral nonetheless. In this phase, people also stop believing in the idea of immanent justice.

Kohlberg's Theory of Moral Development

Psychologist Lawrence Kohlberg (1927–1987) extended upon the foundation that Piaget built regarding moral and cognitive development. Kohlberg, like Piaget, was interested in moral reasoning. Moral reasoning does not necessarily equate to moral behavior. Holding a particular belief does not mean that our behavior will always be consistent with the belief. To develop this theory, Kohlberg posed moral dilemmas to people of all ages, and then he analyzed their answers to find evidence of their particular stage of moral development. After presenting people with this and various dilemmas, Kohlberg reviewed people's responses and placed them in different stages of moral reasoning. According to Kohlberg, an individual progresses from the capacity for pre-conventional morality (before age 9) to the capacity for conventional morality (early adolescence), and toward attaining post-conventional morality (once formal operational thought is attained), which only a few fully achieve.

Moral Stages According to Kohlberg

Using a stage model similar to Piaget's, Kohlberg proposed three levels, with six stages, of moral development. Individuals experience the stages universally and in sequence as they form beliefs about justice. He named the levels simply preconventional, conventional, and postconventional.

Preconventional: Obedience and Mutual Advantage

The preconventional level of moral development coincides approximately with the preschool period of life and with Piaget's preoperational period of thinking. At this age, the child is still relatively self-centered and insensitive to the moral effects of actions on others. The result is a somewhat short-sighted orientation to morality. Initially (Kohlberg's Stage 1), the child adopts an ethics of obedience and punishment —a sort of "morality of keeping out of trouble." The rightness and wrongness of actions are determined by whether actions are rewarded or punished by authorities, such as parents or teachers. If helping yourself to a cookie brings affectionate smiles from adults, then taking the cookie is considered morally "good." If it brings scolding instead, then it is morally "bad." The child does not think about

why an action might be praised or scolded; in fact, says Kohlberg, he would be incapable, at Stage 1, of considering the reasons even if adults offered them.

Eventually, the child learns not only to respond to positive consequences but also learns how to produce them by exchanging favors with others. The new ability creates Stage 2, ethics of market exchange. At this stage, the morally "good" action is one that favors not only the child but another person directly involved. A "bad" action is one that lacks this reciprocity. If trading the sandwich from your lunch for the cookies in your friend's lunch is mutually agreeable, then the trade is morally good; otherwise, it is not. This perspective introduces a type of fairness into the child's thinking for the first time. However, it still ignores the larger context of actions—the effects on people not present or directly involved. In Stage 2, for example, it would also be considered morally "good" to pay a classmate to do another student's homework—or even to avoid bullying—provided that both parties regard the arrangement as being fair.

Conventional: Conformity to Peers and Society

As children move into the school years, their lives expand to include a larger number and range of peers and (eventually) of the community as a whole. The change leads to conventional morality, which are beliefs based on what this larger array of people agree on—hence Kohlberg's use of the term "conventional." At first, in Stage 3, the child's reference group are immediate peers, so Stage 3 is sometimes called the ethics of peer opinion. If peers believe, for example, that it is morally good to behave politely with as many people as possible, then the child is likely to agree with the group and to regard politeness as not merely an arbitrary social convention, but a moral "good." This approach to moral belief is a bit more stable than the approach in Stage 2 because the child is taking into account the reactions not just of one other person, but of many. But it can still lead astray if the group settles on beliefs that adults consider morally wrong, like "Shoplifting for candy bars is fun and desirable."

Eventually, as the child becomes a youth and the social world expands, even more, he or she acquires even larger numbers of peers and friends. He or she is, therefore, more likely to encounter disagreements about ethical issues and beliefs. Resolving the complexities lead to Stage 4, the ethics of law and order, in which the young person increasingly frames moral beliefs in terms of what the majority of society believes. Now, an action is morally good if it is legal or at least customarily approved by most people, including people whom the youth does not know personally. This attitude leads to an even more stable set of principles than in the previous stage, though it is still not immune from ethical mistakes. A community or society may agree, for example, that people of a certain race should be treated with deliberate disrespect, or that a factory owner is entitled to dump wastewater into a commonly shared lake or river. To develop ethical principles that reliably avoid mistakes like these require further stages of moral development.

Postconventional: Social Contract and Universal Principles

As a person becomes able to think abstractly (or "formally," in Piaget's sense), ethical beliefs shift from acceptance of what the community does believe to the process by which community beliefs are formed. The new focus constitutes Stage 5, the ethics of social contract. Now an action, belief, or practice is morally good if it has been created through fair, democratic processes that respect the rights of the people affected. Consider, for example, the laws in some areas that require motorcyclists to wear helmets. In what sense are the laws about this behavior ethical? Was it created by consulting with and gaining the consent of the relevant people? Were cyclists consulted, and did they give consent? Or how about doctors or the cyclists' families? Reasonable, thoughtful individuals disagree about how thoroughly and fairly these consultation processes should be. In focusing on the processes by which the law was created; however, individuals are thinking according to Stage 5, the ethics of social contract, regardless of the position they take about wearing helmets. In this sense, beliefs on both sides of a debate about an issue can sometimes be morally sound, even if they contradict each other.

Paying attention to due process certainly seems like it should help to avoid mindless conformity to conventional moral beliefs. As an ethical strategy, though, it too can sometimes fail. The problem is that an ethics of social contract places more faith in the democratic process than the process sometimes deserves, and does not pay enough attention to the content of what gets decided. In principle (and occasionally in practice), a society could decide democratically to kill off every member of a racial minority, but would deciding this by due process make it ethical? The realization that ethical means can sometimes serve unethical ends leads some individuals toward Stage 6, the ethics of self-chosen, universal principles. At this final stage, the morally good action is based on personally held principles that apply both to the person's immediate life as well as to the larger community and society. The universal principles may include a belief in democratic due process (Stage 5 ethics), but also other principles, such as a belief in the dignity of all human life or the sacredness of the natural environment. At Stage 6, the universal principles will guide a person's beliefs even if the principles mean occasionally disagreeing with what is customary (Stage 4) or even with what is legal (Stage 5).

ENGINEERS AS RESPONSIBLE EXPERIMENTERS:

General responsibility of engineering as society:

- Engineers are primarily considered as technical enablers or facilitators, rather than being the sole experimenters.

- Engineers' responsibility is shared with management, the public and others.

- The other unique responsibility of engineers include monitoring projects, identifying risks, providing customers and clients the required information to make reasonable decisions.

- While exercising engineering duties, the engineers should display the virtue of being morally responsible person.

General features of moral responsible engineers:

1. Conscientiousness
2. Relevant information
3. Moral Autonomy
4. Accountability

Conscientiousness:

· Conscientiousness means commitment to live according to certain values. It implies conscientiousness.

· Engineers have to be sensitive to a range of moral values and responsibilities, which are relevant in a given situation.

· Also engineers should have the willing to develop the skill and apply the effort needed to reach the best balance possible among various considerations.

· _Open eyes, open s and an open mind' are required to evaluate a given situation, its implication and to determine who are involved or affected.

· The primary duty of morally responsible engineers is to protect the safety of human beings and respect their rights of consent.

Relevant information:

· Conscientiousness is impossible without relevant factual information.

· Engineers have to show the commitment to obtain and properly gauge all the information related to meeting one‘s moral obligations.

· The two general ways of losing perspective on the context of one‘s work are given below.

1. To grasp the context of one‘s work, one should be aware of implication of that work.
2. To shifts the responsibility and blames the others in the organization.

Thus, conceiving engineering as social experimentation, it is important that engineers act as responsible agents. The responsible agents require

· Imaginative forecasting of possible bad side effects

· The development of an attitude of _defensive engineering‘ and _preventive technology‘

· Careful monitoring of projects and

· Respect for people rights to give informed consent

CODES OF ETHICS

The ‘codes of ethics’ exhibit, rights, duties, and obligations of the members of a profession and a professional society. The codes exhibit the following essential roles:

1. Inspiration and guidance. The codes express the collective commitment of the profession to ethical conduct and public good and thus inspire the individuals. They identify primary responsibilities and provide statements and guidelines on interpretations for the professionals and the professional societies.
2. Support to engineers. The codes give positive support to professionals for taking stands on moral issues. Further they serve as potential legal support to discharge professional obligations.
3. Deterrence (discourage to act immorally) and discipline (regulate to act morally). The codes serve as the basis for investigating unethical actions. The professional societies sometimes revoke membership or suspend/expel the members, when proved to have acted unethical. This sanction along with loss of respect from the colleagues and the society are bound to act as deterrent.
4. Education and mutual understanding. Codes are used to prompt discussion and reflection on moral issues. They develop a shared understanding by the professionals, public, and the government on the moral responsibilities of the engineers. The Board of Review of the professional societies encourages moral discussion for educational purposes.
5. Create good public image. The codes present positive image of the committed profession to the public, help the engineers to serve the public effectively. They promote more of self regulation and lessen the government regulations. This is bound to raise the reputation of the profession and the organization, in establishing the trust of the public.
6. Protect the status quo. They create minimum level of ethical conduct and promotes agreement within the profession. Primary obligation namely the safety, health, and welfare of the public, declared by the codes serves and protects the public.

7. Promotes business interests. The codes offer inspiration to the entrepreneurs, establish shared standards, healthy competition, and maximize profit to investors, employees, and consumers.

Limitations: The codes are not remedy for all evils. They have many limitations, namely:

1. General and vague wordings. Many statements are general in nature and hence unable to solve all problems.

2. Not applicable to all situations. Codes are not sacred, and need not be accepted without criticism. Tolerance for criticisms of the codes themselves should be allowed.

3. Often have internal conflicts. Many times, the priorities are clearly spelt out, e.g., codes forbid public remarks critical of colleagues (engineers), but they actually discovered a major bribery, which might have caused a huge loss to the exchequer.

4. They can not be treated as final moral authority for professional conduct. Codes have flaws by commission and omission. There are still some grey areas undefined by codes. They can not be equated to laws. After all, even laws have loopholes and they invoke creativity in the legal practitioners.

5. Only a few enroll as members in professional society and non-members can not be compelled.

6. Even as members of the professional society, many are unaware of the codes.

7. Different societies have different codes. The codes can not be uniform or same! Unifying the codes may not necessarily solve the problems prevailing various professions, but attempts are still made towards this unified codes.

8. Codes are said to be coercive. They are sometimes claimed to be threatening and forceful.

INDUSTRIAL STANDARDS

Industrial standards are important for any industry. Specification helps in achieving interchangeability. Standardization reduces the production costs and at the same time, the quality is achieved easily. It helps the manufacturer, customers and the public, in keeping competitiveness and ensuring quality simultaneously. Industrial standards are established by the Bureau of Indian Standards, in our country in consultation with leading industries and services.

International standards have become relevant with the development of the world trade. The International Standards Organization has now detailed specifications for generic products/services with procedures that the manufacturers or service providers should follow to assure the quality of their products or service. ISO 9000-2000 series are typical examples in this direction.

Global issues:

GLOBALISATION

Globalization means integration of countries through commerce, transfer of technology, and exchange of information and culture. In a way, it includes acting together and interacting economies through trade, investment, loan, development schemes and capital across countries. In a different sense, these flows include knowledge, science, technology, skills, culture, information, and entertainment, besides direct human resource, tele-work, and outsourcing. This interdependence has increased the complex tensions and ruptures among the nations. For the engineers, the issues such as multinational organizations,

computer, internet functions, military development and environmental ethics have assumed greater importance for their very sustenance and progress.

MULTINATIONAL CORPORATIONS

Organisations who have established business in more than one country, are called multinational corporation. The headquarters are in the home country and the business is extended in many host countries. The Western organizations doing business in the less-economically developed (developing, and overpopulated) countries gain the advantage of inexpensive labor, availability of natural resources, conducive-tax atmosphere, and virgin market for the products. At the same time, the developing countries are also benefited by fresh job opportunities, jobs with higher remuneration and challenges, transfer of technology, and several social benefits by the wealth developed. But this happens invariably with some social and cultural disturbance. Loss of jobs for the home country, and loss or exploitation of natural resources, political instability for the host countries are some of the threats of globalization.

International Human Rights

To know what are the moral responsibilities and obligations of the multinational corporations operating in the host countries, let us discuss with the framework of rights ethics. Common minimal rights are to be followed to smoothen the transactions when the engineers and employers of MNCs have to interact at official, social, economic and sometimes political levels. At international level, the organizations are expected to adopt the minimum levels of (a) values, such as mutual support, loyalty, and reciprocity, (b) the negative duty of refraining from harmful actions such as violence and fraud, and (c) basic fairness and practical justice in case of conflicts.

The ten international rights to be taken care of, in this context are:

1. Right of freedom of physical movement of people
2. Right of ownership of properties
3. Freedom from torture
4. Right to fair trial on the products
5. Freedom from discrimination on the basis of race or sex. If such discrimination against women or minorities is prevalent in the host country, the MNC will be compelled to accept. MNCs may opt to quit that country if the human rights violations are severe.
6. Physical security. Use of safety gadgets have to be supplied to the workers even if the laws of the host country do not suggest such measures.
7. Freedom of speech and forming association
8. Right to have a minimum education
9. Right to political participation
10. Right to live and exist (i.e., coexistence). The individual liberty and sanctity of the human life are to be respected by all societies.

Technology Transfer

It is a process of moving technology to a new setting and implementing it there. Technology includes hardware (machines and installations) and the techniques (technical, organizational, and managerial skills and procedures). It may mean moving the technology applications from laboratory to the field/factory or from one country to another. This transfer is effected by governments, organizations, universities, and MNCs.

Appropriate Technology

Identification, transfer, and implementation of most suitable technology for a set of new situations, is called appropriate technology. Technology includes both hardware (machines and installations) and

software (technical, organizational and managerial skills and procedures). Factors such as economic, social, and engineering constraints are the causes for the modification of technology. Depending on the availability of resources, physical conditions (such as temperature, humidity, salinity, geographical location, isolated land area, and availability of water), capital opportunity costs, and the human value system (social acceptability) which includes their traditions, beliefs, and religion, the appropriateness is to be determined.

For example, small farmers in our country prefer to own and use the power tillers, rather than the high-powered tractors or sophisticated harvesting machines. On the other hand, the latest technological device, the cell phones and wireless local loop phones have found their way into remote villages and hamlets, than the landline telephone connections. Large aqua-culture farms should not make the existing fishermen jobless in their own village. The term appropriate is value based and it should ensure fulfillment of the human needs and protection of the environment.

ENVIRONMENTAL ETHICS

Environmental ethics is the study of (a) moral issues concerning the environment, and (b) moral perspectives, beliefs, or attitudes concerning those issues. Engineers in the past are known for their negligence of environment, in their activities. It has become important now that engineers design eco-friendly tools, machines, sustainable products, processes, and projects. These are essential now to (a) ensure protection (safety) of environment (b) prevent the degradation of environment, and (c) slow down the exploitation of the natural resources, so that the future generation can survive.

The American Society of Civil Engineers (ASCE) code of ethics, has specifically requires that "engineers shall hold paramount the safety, health, and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of professional duties" The term sustainable development emphasizes on the investment, orientation of technology, development and functioning of organizations to meet the present needs of people and at the same time ensuring the future generations to meet their needs.

Compaq Computer Corporation (now merged with HP) was the leader, who exhibited their commitment to environmental health, through implementation of the concept of 'Design for environment' on their products, unified standards all over the world units, and giving priority to vendors with a record of environmental concern.

Engineers as experimenters have certain duties towards environmental ethics, namely:

1. Environmental impact assessment: One major but sure and unintended effect of technology is wastage and the resulting pollution of land, water, air and even space. Study how the industry and technology affects the environment.
2. Establish standards: Study and to fix the tolerable and actual pollution levels.
3. Counter measures: Study what the protective or eliminating measures are available for immediate implementation.
4. Environmental awareness: Study on how to educate the people on environmental practices, issues, and possible remedies.

Disasters

1. Plastic Waste Disposal

In our country, several crores of plastic bottles are used as containers for water and oil, and plastic bags are used to pack different materials ranging from vegetables to gold ornaments. Hardly any of these are recycled. They end up in gutters, roadsides, and agricultural fields. In all these destinations, they created havoc. The worse still is the burning of plastic materials in streets and camphor along

with plastic cover in temples, since they release toxic fumes and threaten seriously the air quality. Cities and local administration have to act on this, collect and arrange for recycling through industries.

2. E-Waste Disposal

The parts of computers and electronic devices which have served its useful life present a major environmental issue for all the developing countries including India. This scrap contains highly toxic elements such as lead, cadmium, and mercury.

Even the radioactive waste will lose 89% of its toxicity after 200 years, by which time it will be no more toxic than some natural minerals in the ground. It will lose 99% of its remaining toxicity over the next 30,000 years. The toxic chemical agents such as mercury, arsenic, and cadmium retain toxicity undiminished for ever. But these scraps are illegally imported by unscrupulous agencies to salvage some commerciallyvaluable inputs. Instead of spending and managing on the scrap, unethical organizations sell them to countries such as India. This is strictly in violation of the Basel Convention of the United Nations Environment Program, which has banned the movement of hazardous waste. A recent report of the British Environment Agency,13 has revealed that the discarded computers, television sets, refrigerators, mobile phones, and electrical equipments have been dispatched to India and Pakistan in large quantity, for ultimate disposal in environmentally-unacceptable ways and at great risk to the health of the labour.

Even in the West, the electronic junk has been posing problems. Strong regulation including (a) pressure on industries to set up disassembling facilities, (b) ban on disposal in landfill sites, (c) legislation for recycling requirements for these junk and (d) policy incentives for eco-friendly design are essential for our country. The European Union through the Waste Electrical and Electronic Equipment (WEEE) directive has curbed the e-waste dumping by member countries and require manufacturers to implement methods to recover and recycle the components. Indian Government expressed its concern through a technical guide on environmental management for IT Industry in December, 2004. It is yet to ratify the ban on movement of hazardous waste according to the Basel Convention. A foreign news agency exposed a few years back, the existence of a thriving e-waste disposal hub in a suburb of New Delhi, operating in appallingly dangerous conditions. Our country needs regulations to define waste, measures to stop illegal imports, and institutional structures to handle safe disposal of domestic industrial scrap.

3. Industrial Waste Disposal

There has been a lot of complaints through the media, on (a) against the Sterlite Copper Smelting Plant in Thuthukkudi (1997) against its pollution, and (b) when Indian companies imported the discarded French Warship Clemenceau for disposal, the poisonous asbestos compounds were expected to pollute the atmosphere besides exposing the labor to a great risk, during the disposal. The government did not act immediately. Fortunately for Indians, the French Government intervened and withdrew the ship, and the serious threat was averted!

4. Depletion of Ozone Layer

The ozone layer protects the entire planet from the ill-effects of ultraviolet radiation and is vital for all living organisms in this world. But it is eaten away by the Chloro-fluro-carbons (CFC) such as freon emanating from the refrigerators, air conditioners, and aerosol can spray. This has caused also skin cancer to sun-bathers in the Western countries. Further NO and NO2 gases were also found to react with the ozone. Apart from engineers, the organizations, laws of the country and local administration and market mechanisms are required to take up concerted efforts to protect the environment.

5. Global Warming

Over the past 30 years, the Earth has warmed by 0.6 °C. Over the last 100 years, it has warmed by 0.8 °C. It is likely to push up temperature by 3 oC by 2100, according to NASA's studies. The U.S. administration has accepted the reality of global climate change, which has been associated with stronger hurricanes, severe droughts, intense heat waves and the melting of polar ice. Greenhouse gases, notably carbon dioxide emitted by motor vehicles and coal-fired power plants, trap heat like the glass walls of a greenhouse, cause the Earth to warm up. Delegates from the six countries — Australia, China, India, Japan, South Korea and US met in California in April 2006 for the first working session of the Asia-Pacific Partnership on Clean Development and Climate. These six countries account for about half of the world's emissions of climate-heating greenhouse gases. Only one of the six, Japan, is committed to reducing greenhouse gas emissions by at least 5.2 per cent below 1990 levels by 2012 under the Kyoto Agreement.

About 190 nations met in Germany in the middle of May 2006 and tried to bridge vast policy gaps between the United States and its main allies over how to combat climate change amid growing evidence that the world is warming that could wreak havoc by stoking more droughts, heat waves, floods, more powerful storms and raise global sea levels by almost a meter by 2100.

6. Acid Rain

Large emissions of sulphur oxides and nitrous oxides are being released in to the air from the thermal power stations using the fossil fuels, and several processing industries. These gases form compounds with water in the air and precipitates as rain or snow on to the earth. The acid rain in some parts of the world has caused sufficient damage to the fertility of the land and to the human beings.

Human-centered Environmental Ethics

This approach assumes that only human beings have inherent moral worth duly to be taken care of. Other living being and ecosystems are only instrumental in nature. Utilitarianism aims to maximize good consequences for human beings. Most of the goods are engineered products made out of natural resources. Human beings have also (a) recreational interests (enjoy leisure through mountaineering, sports, and pastimes), (b) aesthetic interests (enjoy nature as from seeing waterfalls and snow-clad mountains), (c) scientific interests to explore into nature or processes, and (d) a basic interest to survive, by preservation as well as conservation of nature and natural resources.

Rights ethicists favor the basic rights to live and right to liberty, to realise the right to a live in a supportive environment. Further, virtue ethics stresses importance of prudence, humility, appreciation of natural beauty, and gratitude to the mother nature that provides everything.

However, the nature-centered ethics, which ensures the worth of all living beings and organisms, seems to be more appropriate in the present-day context. Many Asian religions stress the unity with nature, rather than domination and exploitation. The Zen Buddhism calls for a simple life with compassion towards humans and other animals. Hinduism enshrines the ideal of oneness (advaitha) in and principle of ahimsa to all living beings. It identifies all the human beings, animals, and plants as divine. The eco-balance is the need of the hour and the engineers are the right experimenters to achieve this.

COMPUTER ETHICS

Computer ethics is defined as (a) study and analysis of nature and social impact of computer technology, (b) formulation and justification of policies, for ethical use of computers. This subject has become relevant to the professionals such as designers of computers, programmers, system analysts, system managers, and operators. The use of computers have raised a host of moral concerns

such as free speech, privacy, intellectual property right, and physical as well as mental harm. There appears to be no conceptual framework available on ethics, to study and understand and resolve the problems in computer technology.

Types of Issues

Different types of problems are found in computer ethics.

1. Computer as the Instrument of Unethical Acts

(a) The usage of computer replaces the job positions. This has been overcome to a large extent by readjusting work assignments, and training everyone on computer applications such as word processing, editing, and graphics.

(b) Breaking privacy. Information or data of the individuals accessed or erased or the ownership changed.

(c) Defraud a bank or a client, by accessing and withdrawing money from other's bank account.

2. Computer as the Object of Unethical Act

The data are accessed and deleted or changed.

(a) Hacking: The software is stolen or information is accessed from other computers. This may cause financial loss to the business or violation of privacy rights of the individuals or business. In case of defense information being hacked, this may endanger the security of the nation.

(b) Spreading virus: Through mail or otherwise, other computers are accessed and the files are erased or contents changed altogether. 'Trojan horses' are implanted to distort the messages and files beyond recovery. This again causes financial loss or mental torture to the individuals. Some hackers feel that they have justified their right of free information or they do it for fun. However, these acts are certainly unethical.

(c) Health hazard: The computers pose threat during their use as well as during disposal.

3. Problems Related to the Autonomous Nature of Computer

(a) Security risk: Recently the Tokyo Stock Exchange faced a major embarrassment. A seemingly casual mistake by a junior trader of a large security house led to huge losses including that of reputation. The order through the exchange's trading system was to sell one share for 600,000 Yen. Instead the trader keyed in a sale order for 600,000 shares at the rate of one Yen each. Naturally the shares on offer at the ridiculously low price were lapped up. And only a few buyers agreed to reverse the deal! The loss to the securities firm was said to be huge, running into several hundred thousands. More important to note, such an obvious mistake could not be corrected by some of the advanced technology available. For advanced countries like Japan who have imbibed the latest technology, this would be a new kind of learning experience.

(b) Loss of human lives: Risk and loss of human lives lost by computer, in the operational control of military weapons. There is a dangerous instability in automated defense system.

An unexpected error in the software or hardware or a conflict during interfacing between the two, may trigger a serious attack and cause irreparable human loss before the error is traced. The Chinese embassy

was bombed by U.S. military in Iraq a few years back, but enquiries revealed that the building was shown in a previous map as the building where insurgents stayed.

(c) In flexible manufacturing systems, the autonomous computer is beneficial in obtaining continuous monitoring and automatic control.

Various issues related to computer ethics are discussed as follows:

Computers In Workplace

The ethical problems initiated by computers in the workplace are:

1. Elimination of routine and manual jobs. This leads to unemployment, but the creation of skilled and IT-enabled service jobs are more advantageous for the people. Initially this may require some upgradation of their skills and knowledge, but a formal training will set this problem right. For example, in place of a typist, we have a programmer or an accountant.

2. Health and safety: The ill-effects due to electromagnetic radiation, especially on women and pregnant employees, mental stress, wrist problem known as Carpel Tunnel Syndrome, and back pain due to poor ergonomic seating designs, and eye strain due to poor lighting and flickers in the display and long exposure, have been reported worldwide. Over a period of long exposure, these are expected to affect the health and safety of the people. The computer designers should take care of these aspects and management should monitor the health and safety of the computer personnel.

3. Computer failure: Failure in computers may be due to errors in the hardware or software. Hardware errors are rare and they can be solved easily and quickly. But software errors are very serious as they can stop the entire network. Testing and quality systems for software have gained relevance and importance in the recent past, to avoid or minimize these errors.

Property Issues

The property issues concerned with the computers are:

1. Computers have been used to extort money through anonymous telephone calls.

2. Computers are used to cheat and steal by current as well as previous employees.

3. Cheating of and stealing from the customers and clients.

4. Violation of contracts on computer sales and services.

5. Conspiracy as a group, especially with the internet, to defraud the gullible, stealing the identity and to forge documents.

6. Violation of property rights: Is the software a property? The software could be either a program (an algorithm, indicating the steps in solving a problem) or a Source code (the algorithm in a general computer language such as FORTAN, C and COBOL or an Object code (to translate the source code into the machine language). How do we apply the concept of property here? This demands a framework for ethical judgments. Property is what the laws permits and defines as can be owned, exchanged, and used. The computer hardware (product) is protected by patents. The software (idea, expression) is protected by copyrights and trade secrets. But algorithms can not be copyrighted, because the mathematical formulas can be discovered but not owned. The object codes which are not intelligible to human beings can not be copyrighted.

Thus, we see that reproducing multiple copies from one copy of (licensed) software and distribution or sales are crimes. The open source concepts have, to a great extent, liberalized and promoted the use of computer programs for the betterment of society.

Computer Crime

The ethical features involved in computer crime are:

1. Physical Security

The computers are to be protected against theft, fire, and physical damage. This can be achieved by proper insurance on the assets.

2. Logical security

The aspects related are (a) the privacy of the individuals or organizations, (b) confidentiality, (c) Integrity, to ensure that the modification of data or program are done only by the authorized persons, (d) uninterrupted service. This is achieved by installing appropriate uninterrupted power supply or Back-up provisions, and (e) protection against hacking that causes dislocation or distortion. Licensed Anti-virus packages and firewalls are used by all computer users to ensure this protection. Passwords and data encryption have been incorporated in the computer software as security measures. But these have also been attacked and bye-passed. But this problem is not been solved completely.

Major weaknesses in this direction are: (a) the difficulty in tracing the evidence involved and (b) absence of stringent punishment against the crime. The origin of a threat to the Central Government posted from an obscure browsing center, remained unsolved for quite a long time. Many times, such crimes have been traced, but there are no clear cyber laws to punish and deter the criminals.

Privacy and Anonymity

The data transmission and accessibility have improved tremendously by using the computers, but the right to privacy has been threatened to a great extent. Some issues concerned with the privacy are listed hereunder:

1. Records of Evidence

Service records or criminal records and the details of people can be stored and accessed to prove the innocence or guilty. Records on psychiatric treatment by medical practitioners or hospital, or records of membership of organizations may sometime embarrass the persons in later years.

2. Hacking

There are computer enthusiasts who willfully or for fun, plant virus or “Trojan horses” that may fill the disc space, falsify information, erase files, and even harm the hardware. They breakdown the functioning of computers and can be treated as violation of property rights. Some hackers opine that the information should be freely available for everybody. It is prudent that the right to individual privacy in limiting the access to the information on oneself, should not be violated. Further any unauthorized use of personal information (which is a property), is to be considered as theft. Besides the individual privacy, the national security, and freedom within the economy are to be respected. The proprietary information and data of the organizations are to be protected so that they can pursue the goals without hindrance.

3. Legal Response

In the Indian scene, the Right to Information Act 2005 14 provides the right to the citizens to secure access to information under the control of public authorities, including the departments of the central government, state governments, government bodies, public sector companies and public sector banks, to promote transparency and accountability of public authorities.

Right to information: Under the Act, section 2 (j), the right to information includes the right to

(1) Inspect works, documents, records,
(2) take notes, extracts or certified copies of documents or recorecord
(3) take certified samples of material, and
(4) obtain information in the form of printouts, diskettes, floppies, tapes, video cassettes or in any other electronic mode.

4. Anonymity

Anonymity in the computer communication has some merits as well as demerits. While seeking medical or psychological counseling or discussion (chat) on topics, such as AIDS, abortion, gay rights, the anonymity offers protection (against revealing their identity). But frequently, anonymity is misused by some people for money laundering, drug trafficking and preying upon the vulnerable.

ETHICS AND CODES OF BUSINESS CONDUCT IN MNC

Sarbans-Oxley Act, 2002 (U.S.A.) and New York Stock Exchange listing standards have made many corporate organizations ethics conscious. The organizations are to disclose codes of business conduct and ethics for the organizations.

For example, Texas Instruments a major MNC, has declared that “Ethical reputation is our vital asset. Upon applying values each of the employee can say, TI is a good company, and one reason is that I am part of it”.

Three major values such as Integrity, Innovation and Commitment, have been elaborated in the Form of 28 ethics statements (as pledges to keep) and 17 codes of business conduct have been presented in their documents.

A quick ethics test suggested by TI for all of its employees, without exception, will sufficiently explain their commitment:

1. Is the action LEGAL?
2. Does it comply with our VALUES?
3. If you do it, will you feel BAD?
4. How will it look in the NEWSPAPER?
5. If you know it is WRONG, don’t do it.
6. If you are not sure, ASK
7. Keep asking until you get an answer.