CHAPTER 5

Responsibilities of Engineers

In the previous chapter the concepts of social experimentation, safety and risk were discussed. In this chapter we move forward to responsibilities of the engineers. It is said that people with character accept responsibilities. Accepting responsibilities involves taking calculated and *not* foolish risks and being accountable. It means evaluating all the pros and cons of a situation. The focus in this chapter is on both internal and external responsibilities, which means responsibilities to employers and to the outside world respectively. It also examines issues of conflict, their causes and conflict resolution.

INTERNAL RESPONSIBILITIES

Imagine how many engineers would have worked as a team for how many years to build the *Titanic and the Challenger* ! How many engineers are working in L & T, Infosys, and Wipro today! Team play is very important in experimentation and successfully building organizations. Team play involves, affection and respect for one another and a helping attitude. All the members of a team do not have the same capabilities. Just as our hand has five fingers of different sizes, a team consists of different types of people. Their individual goals need to be subordinated to the group's goals. Responsibilities herein are just as much professional responsibilities as those owed to public. Team play involves virtues of collegiality, loyalty, respect for authority and collective bargaining.

Collegiality

The central elements of collegiality are respect, commitment, connectedness and cooperation.

In Chapter III, we discussed the theory of respect. Respect is valuing one's peers for their professional expertise and their devotion to the social good promoted by the profession. This means affirming the worth of other engineers engaged in producing socially useful and safe products. Collegial respect is reciprocal. Commitment means sharing a devotion to the moral ideals inherent in the practice of engineering. Even when there is fierce competition, there should be a feeling that other engineers share a concern for the overall good. The underlying values are beyond just winning. Shiv

Collegiality means respect, Commitment, connectedness and co-operation

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Khera points out that *Greed, Fear* and *Pressure* affect our ethical values. Pressure to perform cannot justify unethical acts

Connectedness is the awareness of being part of a larger business system created by shared commitments and expertise. It is more than showing respect for peers. This sense of unity with other engineers evokes co-operation and support. It leads to net working. Collegiality is a virtue that strengthens one's motivation to live up to professional standards. It encourages shared values and is an essential character trait.

Loyalty

Loyalty is more than 'obligation' or 'duty', which are more specific. Obligation and duty are more 'formal responsibility' oriented. Their base is legal and positional. By contrast, loyalty is more a function of attitudes, emotions and a sense of identity. People may hate the job that they do and not like their employer, but they would still perform their duty as long as they are employees. Can they be automatically considered loyal ? Which is a more desirable character attribute?

The relationship between engineers and employers is coming under increasing scrutiny in recent years. There are moral issues involved in the sense that loyalty to one's employer is considered by many as being more important than loyalty to the public. Engineers oftentimes have to choose between the two. In such situations what should he choose? Loyalty is important to an employer and it would be expected of all employees when they work for the him. A U.S. Court gives the definition of loyalty thus: "we have read into every contract of employment and it is an implied duty that an employee is to act solely for the benefit of his or her employer in all matters within the scope of employment." This definition is useful because it tries to define the scope of activities a loyal employee should fulfill, as well as emphasize that the employee should work for the benefit of the company. Asking an individual to perform illegal activities for a firm would not be to the firm's long-term advantage since any illegal action would ultimately harm the firm.

Loyalty to the Company and Responsibility to the Public

The responsibility of an engineer to the public is paramount, many opine. However, it is too much to expect that obligation to the public should always override obligation to one's employer. Both obligations are important. When they come into conflict, it is necessary to examine the specific situation before deciding which ought to take precedence.

A professional's concern for public welfare may often place him in opposition to his employer. Many cases illustrating this conflict come from the engineering profession, since approximately 90 percent of engineers are employees. However, the employee rights issue is sure to become more widespread in all professional ranks. More physicians are being employed and many lawyers work for corporations and large legal firms. Chartered accountants work for accounting firms and corporations, and so do management accountants. Professionals are increasingly subject to organizational conflicts. The problems posed by the professional's rights at the work place are complex, because employers do have the legitimate right to expect loyalty, confidentiality and obedience from their employees, including professional employees. What rights should professionals have against employers ?

We will begin this discussion accepting that all employees, including professional employees, owe unqualified loyalty to their employers. In a well-known article, Samuel Florman, an engineer, is concerned about what he calls "the deceptive platitude that a professional's primary obligation is to the public." According to him, the three problems that would develop from this 'platitude' are:

First, ties of loyalty and discipline would dissolve, and blowing the whistle on one's superiors would become the norm instead of the last resort.

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Second, any engineer who declines a commission in deference to his scruples, furthermore, will only pass it along to a colleague of less refined sensibility.

Third, as a class engineers will have neither the ability nor the right to plan social change.

Forman's first criticism is directed especially at safety and risk issues. An engineer may want to introduce more safety features in a product, and management may not. It is obvious that any product can be made safer by adding more features. But there is a point where the costs of adding additional safety features would make manufacturing the product not worth the while. It is necessary to reach a confidence level where overt risks are dealt with, yet not all risks.

Florman is correct in remarking that if every engineer constantly demanded more protection for the public, no product would ever get out of a factory. There has to be some point where management can go ahead with a product. Florman's argument suggests that bickering and conflict would occur most of the time, or at least enough to be problematic, *Yet the claim that conflict would become the 'norm', as Florman suggests, is not necessarily true.* Secondly, there is a value to a corporation in having its employees bringing to its attention an obviously faulty product. It is hard to see how this type of behavior would harm the firm.

Now let us consider Florman's second argument. The fact that a second engineer might perform an immoral act refused by the first does not legitimize it. Immoral behavior will occur at times, nothing can prevent that. If enough engineers stood by their professional codes and refused to act immorally, Florman's second fear would be unfounded.

Now let us consider Florman's third criticism. What is an engineer's role in public policy issues? Broadly there are two shades of public policy issues. The first type involves deciding on alternative strategies, which will affect the public. An example would be the decision whether to build a nuclear power plant or not. A nuclear power engineer has neither the responsibility for deciding whether his company should build nuclear power plants, nor the responsibility for deciding whether the government should ban them. Florman is correct – engineers do not have responsibility for this type of decision. They can advise, but persons to whom the public has given the responsibility must make the decision.

There is a second type, a kind of obligation. Herein assurances are given to the public that whatever is done will be done within professional standards. Here an engineer does have an obligation to the public. It is necessary to distinguish between "solving problems and establishing goals." Goals are public policy decisions, and should be set by those given the power to do so. But engineers must uphold professional standards even when their employers object.

Let us now look at a couple of instances to understand the conflict between commitments:

(*a*) A policeman's wife is on her deathbed. He is by her side when he gets a call to handle a crime emergency where ten lives are at stake. What should he do?

(*b*) A surgeon is on his way to attend his only daughter's graduation, once in a lifetime event, which he had promised to attend. Minutes before the start of the ceremony, he gets an urgent call to operate on an accident victim to save his life. What choice does he have?

Choosing one option does not mean a lack of commitment to the other. The process of choosing between the two commitments involves priorities, responsibility and duty. Value based priorities help us to choose one commitment over the other. The issue is to whom do we owe our loyalties? Is it to an individual or the organizations? The answer is neither. We owe loyalties to values. Where value systems are conflicting, people find it difficult to co-exist in the work place. Respect for Authority

In order to meet the organizational goals, the professionals should possess respect for authority.

Respect for authority

Authority relationships between employers and employees are normally necessary for avoiding

We should owe loyalties to values

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the negative effects of unlimited individual discretion. An employment contract constitutes a promise on the part of employees to recognize legitimate institutional authority. The obligation to obey authoritative directives should not be considered as an obligation to suspend one's critical faculties and blindly follow those directives regardless of their moral content. Institutional authority is the right of employers and managers to exercise power so employees will meet their institutional duties, and is morally justified only where the goals of the institution are morally permissible and when the way in which it is exercised does not violate other moral duties.

A subordinate accepts his superior's authority. He holds in abeyance his own critical faculties for choosing between alternatives and uses the formal criterion of the receipt of a command or signal as the basis for choices. This means that professionals should accept their superior's suggestions and orders without any critical review or consideration. At most, their reasoning should be aimed at anticipating commands by asking themselves how the superior would wish them to behave in given circumstances. All employees have limits to what they will accept from their employers, but within these limits the employee finds as relaxing his own critical faculties and permitting his behaviour to be guided by the decision of his superior, without independently examining the merits of that decision. These claims for a virtually complete sacrifice of employee autonomy need a strong justification. A doctor who is told by his/her superior to watch costs (a legitimate request) is not in the same situation as a doctor requested to cut costs by not performing certain required procedures. The problem is whether limits can be set for professionals. The institutional authority is acquired, exercised and defined within the institution. It is an institutional right given to a person to exercise power based on the resources of the institution. Many codes of ethics state that the engineer's paramount obligation is to protect the public health, safety and welfare rather than the obligation of loyalty and faithful service to employers.

Apart from institutional authority, there is an authority because of the knowledge and expertise. The institutional authority should not be equated with expert authority. Expert authority is the possession of specialist knowledge, skill or competence to perform some task or to give sound advice. It is better to understand the difference between power and authority. Power is effective and goes beyond the authority. A highly respected engineer of proven integrity may have power within an organization exceeding institutional authority. Power is more related to influence. A leader, formal or informal, has more power.

Perceptually, there is a close relationship between the respect for authority and loyalty. It is assumed that higher the respect for authority, higher is the loyalty. Both are in a continuum and hence involve different degrees. But let us not confuse between these two concepts. Loyalty to the company should not be equated with obeying all orders of one's immediate supervisor. Acting for public commitment is more responsible than loyalty to the organization or employers. An engineer should remember that he has also responsibility to his colleagues, subordinates, public, and customers.

Collective bargaining

Collective bargaining is a process, which is used by companies to solve interpersonal problems between them and their employees. There are legal provisions for this system. It adopts a negotiation process. It has been dealt with under techniques of conflict resolution. An employer and his employees come together and sign an agreement which is to be honored by both the parties. Some guidelines for the negotiation process:

- Attack problems and not people
- Build Trust
- Start with a discussion and analysis of the interests, concerns, needs and whys of each party. Begin with interests, not positions or solutions.

Engineer has Responsibility towards colleagues, public and customers

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- Listen
- Brainstorm; suggesting an idea does not mean one agrees with it. Develop multiple options.
- Use objective criteria whenever possible. Agree on how something will be measured.

Collective bargaining assumes 'unionism'. Every organization employing more than 20 persons could have a union. In some organizations, they have a single union. . More than one is also permitted. There may be formal and informal. Often employees may feel that employers are exploiting and cheating them. Unions are formed to take care of the interests of employees. There are engineering unions in organisations that have many engineers working. Some high level professional managers view Unions as a threat. Unions should be viewed as conduits for the expression of collective will. They have lot of bargaining power due to size. Unions can often prevent unethical acts of the employers. They give job security and protection against ill treatment.

Some professionals oppose unionism and feel that it goes against the principle of loyalties and respect for authority. There are arguments for and against unionism. Unions may go on strike. Many codes of ethics are against strikes. The issue is whether unions and collective bargaining practices are ethical or unethical. For example, a small-scale engineering firm employing 120 persons was on high growth stage with a 120% growth rate. When the eyes were on growth, certain signals from the employees were not taken notice of by the employers. In the hunger for growth they missed feeling the pulse of dissatisfaction. The employers thought that growth was in the interest of all. Diploma engineers formed a union. An external union leadership entered the scene. They demanded a lot of amenities that the company could ill afford. Lot of time was expended on bargaining. The employees went on a 'go slow' strike. Production suffered, and the company's performance went down. The company had to be sold and the buyer closed down the company. All of them lost their jobs and livelihood. The union did not realize what they were doing was against their own interest. By the time they realized it was too late. For getting short-term gains, they lost long term benefits. The external union took care of them with some subsistence payments initially, but later that also stopped. In this case who is to be blamed?

EXTERNAL RESPONSIBILITIES

The issues with outside world involve confidentiality, conflict of interest and occupational crimes.

Confidentiality

Keeping confidence is one of the most central and widely acknowledged duties of any professional. Confidentiality implies that a communication is kept secret and will remains private. A person reveals sensitive information to another only because of the trust that the disclosed information will remain private and confidential. In codes of ethics of societies/associations, there are explicit rules requiring their members to maintain total confidentiality of any privileged information they are in possession of. A piece of information/communication that is conveyed to someone else with the expectancy that it will remain private is privileged. Anything disclosed which other people can have access to through other means is not. Ethical rules do not attempt to prevent general gossip. They cover only secrets revealed to professionals during professional work. Some laws protect professional confidence while there are other laws forcing the betrayal of confidentiality. Such situations create ethical dilemmas for the professions and professionals.

In case of engineers, design and drawings, process charts etc. are to be kept confidential. More so for consultants. We have a case in Chapter VI on this issue. What is confidential and what is not is the ethical question. One solution is to have a professional explain to the client in advance before commencing the work

Confidentiality and conflict of interest involve external agents

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When employees shift or change jobs, it is important not to leak out confidential information. This means that confidentiality does not cease when employees change jobs. Thus the relationship of trust between employer and employee in regard to confidentiality continues beyond the formal period of employment.

We have numerous cases like that of Sundeep Vani. (See earlier Chapter) who face such situations. Many engineers value professional advancement more than long-term ties with any one company and so change jobs frequently. Engineers in research and development are especially likely to have trade secrets. Maintaining confidentiality is easier said than done.

Employers insist on specific undertakings before relieving employee from their jobs to prevent leakage of confidential information. Mr. Mordechal Vanunu, one of the world's best known whistle blowers, had to spend18 years in the Israeli prisons for leaking out secrets about Israel's nuclear weapon programmes till his release recently.

Texas Instruments provides guidance to its engineers to deal with the moral and ethical dilemmas through its website. Following situations have been taken from the. Website: http://onlineethics.org

The Responsibility for Safety and the Obligation to Preserve Client Confidentiality : Tenants sue their building's owner, and the owner employs an engineer who finds structural defects not mentioned in the tenant's lawsuit. Conflicting issues involve public safety versus client confidentiality.

Code Violations with Safety Implication : An engineer discovers deficiencies in a building's electrical and mechanical systems. It would breach client confidentiality (and the contract) to report them to a third party, but the engineer also has a responsibility to public safety.

Whistle blowing City Engineer : An engineer privately informs other city officials of an environmental threat, a problem her supervisor has ordered her not to disclose. The engineer is taken from the case, but is still advising another technician on the situation. The engineer has an obligation to both the supervisor of the company and to the public for the environmental health of the residents.

A Defense engineer blew the whistle, by taking objections to a subcontractor's poor performance. These objections were ignored and silenced by management. Under the circumstances what is the responsibility of Defense Engineer ?

Reporting : A engineer has signed an agreement with his employer to keep the hazardous information . He is confronted with a choice between keeping the secret or inform the public. The former is regarding keeping the information secret and later is in the public interest. As in the previous case, the responsibility of engineer is towards public and employer.

Recommendation letter: There is a conflict faced by a engineer when he has to write a recommendation letter for his friend who is another engineer. The letter is called by Board of Ethical Review (BER) . Should he write any negative comments about other engineer

A group of engineers leave their employer to start their own firm. The new firm contacts clients from their former employer. They start criticizing the capability of the other firm in providing competent services. The clients doubt the promotion done by the former company. Should engineers go to the clients of the former employers ?

A engineer working in the public welfare department of Government defies immediate supervisor because he believes supervisor's instruction would pose an environmental health hazard. Similarly a engineer working in a private firm is faced with a situation of Public welfare. To protect the interest of client, his supervisor orders to dispose hazardous waste.

Using Company Resources.: XYZ Corporation permits its employees to borrow company tools. Engineer took full advantage of this privilege. He went one step further and ordered tools for his unit

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that would be useful for his home building projects even though they were of no significant use to his unit at XYZ.

Occupational crimes

Occupational crimes are illegal acts made possible through one's lawful employment. It is the secretive violation of laws regarding work activities. Many occupational crimes are specific instances of conflicts of interest, especially when the crime involves personal gain that constitutes or leads to the failure to meet professional obligations. Price fixing and industrial espionage are examples of occupational crimes. They impinge on various aspects of professionalism, loyalty, conflict of interests and confidentiality. Espionage is taken up in detail in the next chapter. Competitors come together and decide on the prices to be charged. These are called as pricing cartels. The price fixation leads to restraint of free competition and trade. It leads to unfair practices. Suppose the Government invites quotations for building a power plant. The companies, who quote for the work, come together and decide on the prices to be quoted. There are other instances of price fixation.

Endangering the lives of employees knowingly is yet another example of an occupational crime. An appropriate example is that of asbestos manufacture. Manville Corporation, a company manufacturing asbestos, knew that asbestos dust was harmful for the health of its employees. It could cause incurable lung cancer. For three decades, the company kept this information secret from the workers and the public who had the right to be informed. The company felt that as long as a man feels well, is happy at work, nothing was wrong. It was found that the asbestos related diseases developed after two to three months of exposure. It often led to nonmalignant asbestos disease or lung cancer. Many successfully filed cases to claim damages. Now companies manufacturing and selling asbestos have to take steps to protect their employees and mention the harmful effects of the product and prominently display the same in all advertisements and in shops selling asbestos. It is the same story in the case of cigarettes. It is mandatory to display prominently in all packages that cigarette smoking is injurious to health.

The Bhopal Gas Tragedy Case

Many Decembers ago, there was a leak of poison gas from the Union Carbide Plant in Bhopal. Deadly methyl isocynate was inadvertently leaked into the atmosphere killing more than 20,000 people in the city of Bhopal. The parent company was held accountable for its actions. The company had to pay for the medical care of the survivors and their children, as well as a massive environmental cleanup

Conflict of interests

Conflict of interests is a situation in which two or more interests are not simultaneously realizable. In pursuing their lives, individuals establish goals and put into practice plans to achieve them. A goal to which an individual is committed is commonly called and 'interest' of that individual. Not all goals can be achieved. Individuals can set impossible goals that conflict with the nature of reality. For example, a student of below average intelligence setting the goals of getting A's in all his courses while working a full time job and playing a sport. Individuals can set goals that conflict with the goals of other individuals. For example, a burglar's goal of stealing gold jewellery is in conflict with the owner's goal of keeping it.

Professional conflicts of interest are situations where professionals have an interest, which if pursued might keep them from meeting their obligations to their employers or clients. Sometimes such an interest involves serving in some other professional role , say, as a consultant for a competitor's company. Other times it is a more personal interest, such as making substantial private investments in a competitor's company. This threat to meeting professional obligations makes it clear why conflict of interest has been given prominence in the codes of ethics in engineering, law and management.

Occupational crimes are secretive violation of laws regarding work activities

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Conflict of interests may cause impairment in judgment and moral decisions. It is said that conflict of interests can arise under two conditions (1) the professional is in a relationship that requires exercising good judgment on behalf of the employer or client and (2) the professional has some additional or side interest that could threaten good judgment in serving the interests of the employer or client.

Conflict of interest can also arise in professional agent/client relationships – a consultant t engineer hired by two clients with conflicting interests or a corporate director who is offered a job in a government agency that regulates his corporation. Professional-agent conflicts of interests raise moral concern because such conflicts make it more difficult for the agent to be objective in evaluating the interests of both sides, thus clients are less certain that the agent will act in their best interests.

Conflict of interest cannot be avoided; this is the law of nature. Conflict of interests is fundamental and it can be settled only by someone's interests having being sacrificed. Since conflict of interests is more fundamental to human relationships than ethics is about resolving conflict. Ethics is about deciding whose interests must be sacrificed. It should also identify and fulfill legitimate interests.

Employees have various obligations to their employees. Conflicts of interest arise when employees have a personal interest in a transaction substantial enough that it does, or might reasonably be expected to lead them to act against the interests of the organization. Conflict of interests arises due to (a) Financial investments, (b) Insider Trading, (c) Bribe, (d) Gifts, and (e) Kickbacks. Let us look at each one of them briefly:

1. **Financial investments :** Conflict of interests will arise because of financial investments in a competitors' or subsidiaries business. Unethical decisions are taken because of personal or organizational interest. For example, if you are an engineer and chief executive of a firm and another firm which has bid for a large project of your company. You have a financial stake in that firm which has bid for it. You have to decide to whom to award the contract? The tendency will be to award the bid to the company where you have stakes. Is it ethical ? Under what situation it will be regarded as an ethical decision?
2. **Insider trading :** This involves using privileged information unfairly. It may be done deliberately or innocently by slip of the tongue. When you are working for a company, you could have access to confidential information which others would not be privy to. If such information relates to the financial performance of the company and you use it to trade in the shares of the company, this would be considered insider trading. This happens often in the corporate world. As a senior executive of the company, is it right for you to do this? Is it ethical or unethical?
3. **Bribes :** A bribe is a substantial amount of money or goods offered beyond a stated business contract with the aim of gaining an advantage. Bribes are generally given in secret. Bribes are illegal or immoral because they threaten fairness in competitive situations. Bribes are substantial unlike gratuities which are of smaller amounts. Traditionally, certain types of gratuities have been recognised as legitimate in the normal conduct of business, while others can bias judgment like a bribe does. There is no universally accepted definition of what constitutes a bribe. Many people regard a 'kickback' as a 'commission' for services rendered and not as a bribe. A gift of a new BMW after the conclusion of a deal may be viewed in many societies as an expression of gratitude rather than as bribe, even if some degree of quid pro quo is implied. A bribe signifies that the executive is serious and will behave himself to avoid upsetting a relationship in which he has invested. Bribes, therefore, may not be seen as corrupting although it should be noted

Conflict of interest cannot be avoided

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that there is loss of face when exposed. Bribery is certainly corrupting when it occurs in rule-based societies or does not contribute to relationships that are essential to making the systems work.

4. **Gifts :** Gifts are not bribes as long as they are small gratuities offered in the normal conduct of business. Often companies give gifts to selected employees of various government agencies they deal with or partners in trade. Many such gifts are unobjectionable. However, expensive gifts are intended as bribes, and still others create conflicts of interest that do not, strictly speaking, involve bribe. What is the difference? In theory these distinctions may seem clear but in practice they become blurry.
5. **Kickbacks :** Prearranged payments made by contractors to companies or their representation in exchange for contracts actually granted are called kickbacks A classic situation is that of a purchasing agent for a company or government. being offered a payment in exchange for a contract. In the West this is considered unethical, and perhaps illegal. In many countries it is business as usual. Kickbacks are seen as corrupting in the West because they imply a conflict of interest. The purchasing agent is supposed to represent the interests of his company. If the agent is taking payments, his or her own interests interfere. The proper procedure is to look at the bids, investigate the companies, and choose the best deal. If they do not, the supplier is guilty of fraud and can be taken to court. The business relationship is based primarily on a framework of rules that most people believe in and take seriously.

In a different kind of society, business relationships are personal. Rather than doing business with a company, one does business with a person and the relationship is based on mutual trust, which might have been built over a long period. When things go wrong, it is no use to call a lawyer. The agent must rely upon his personal relationship with another human being. Because a major part of the agent's task is to establish this relationship, there is no conflict of interest in doing so. One way a supplier can demonstrate his commitment to the relationship is to put money on the line. If the supplier has paid for the relationship, he is less likely to vanish when there is a problem. The agent who receives a kickback is therefore doing his job. Written contracts are traditionally not part of this process, because the concept of a contract presupposes an overarching framework of rules and laws that enforce the contract. Many people around the world do not believe in the legitimacy of any such framework, because they are not universalists as Westerners are. They regard a piece of paper as just that. Any kind of enforceability must be based on flesh and blood, on a relationship of mutual trust and commitment between human beings. Since most modern businesses have accepted the Western practice of written contracts, some interesting anomalies result. For example, in some countries (*e.g.*, Egypt), it is customary to write 'kickbacks' into the contract.

Conflict resolutions

As stated earlier, conflict is a struggle between at least two independent parties. Trust and a high level of ethical behaviour are essential for successful conflict resolutions. Arguments, yielding, yelling, stalling, threats, coercion are all images of conflict. There are three basic styles of conflict management: *avoidance*, *competitive negotiation* and *principled negotiation*. Most people use more than one style, depending on the situation. Some people try to avoid dealing with conflict. In competitive negotiation, each party pressurizes the other to change. Control, coercion, threats, walkouts and lying are all approaches employed. It is a win-lose style. Both the parties come with their solution that is in their own interest. . This approach can be useful when the goal is more important than the relationship. Relationship is rarely improved by competitive negotiation. The goal has to be that important that one is willing to sacrifice the relationship. *Principled negotiation* calls for collaborative negotiation, but in a win-win style. It requires keen perception, good communication skills, creativity and most importantly trust.

Kickbacks imply conflict of interest

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Relevance and Conflict Problems

A moral issue involves doubts about the proper application of one or more moral principles to a situation. There are two common problems that we face in applying moral principles : *relevance* and *conflicting principles*. In a *relevance problem*, we are not sure as to which principle applies in a particular situation. For example, whether, applying a process you developed when you were working for Company A to a situation in Company B for whom you are working now, is use of proprietary information or not is a relevance problem. Its resolution depends on the resolution of the conceptual issue as to how we define "proprietary." In a **conflict problem**, we are faced with two or more principles, which apply to a particular situation, but the two principles would call for different and incompatible actions. For example, suppose an engineer feels that she has an obligation to stay with an employer who has been very supportive of her over a number of years, and at the same time she has a social urge to move to another company where she could participate in the development of environmentally safe products. Here she faces a conflict problem, because apparently either her obligation to her old employer or her urge to contribute her expertise to the development of environmentally safe products can be met.

A Method for Resolving Relevance Problems

Often, the answer to a conceptual issue provides the answer to a relevance problem as well. For example, the question whether the information the engineer used from his previous job to help Company B was "proprietary" or not is a relevance problem, but it depends on the definition of the term "proprietary." Once we know the definition of "proprietary" we can probably determine whether his action was wrong or not.

Since relevance problems arise when we encounter a situation in which the application of a concept is unclear, it makes sense to go back to situations in which the application of the concept was clear. Then, by comparing the similarities and differences between the situations, we can come to some conclusion about the propriety of applying the concept in the issue at hand. This method involves three steps.

First, set up a series of cases, ranging from a case where the concept clearly applies, through a series of ambiguous cases, to a case in which the concept clearly does not apply. Consider the situation described earlier. Since it is felt that using the information gained at Company A to help Company B with a new process is "theft of an idea" (and therefore wrong), it amounts to whether the information passed on is really "proprietary," The engineer should imagine a case where there is a clear transfer of proprietary information. We can call this the positive paradigm case, because it is a case in which the use of the term "proprietary" to describe the information that is transferred is clearly appropriate. Then he should imagine a case in which the term "proprietary" clearly is not appropriate as a description of the information that is transferred.

Second, the morally relevant similarities and differences among the various cases must be enumerated. There is no magic formula for determining what is and is not morally relevant. Rather, you must rely on your own sense of what is morally relevant. In case, for example, one of the characteristics of the positive paradigm case would probably be that it would give Company B a competitive edge over Company A. This is morally relevant because it relates directly to the fundamental reason that a company would want to keep certain information secret. Another characteristic of the positive paradigm case would be that exactly the same process is being transferred from Company A to Company B. By contrast, a negative paradigm case might be one in which there is no possibility of the transferred information putting Company A in an advantageous position with respect to Company B, and in which in

Conflict problem involve two or more moral principles

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fact the only transfer of "information" is in the limited sense that the original process started a chain of ideas in thinking that finally led to a new and creative process for Company B.

Third, after enumerating the morally relevant similarities and differences in the various cases, you must determine the line of demarcation between transfers of information that should and should not be proprietary. In some instances this may be relatively easy to do, but in others no precise point of demarcation may present itself. This should not be surprising. Although we all recognize a difference between day and night, it may be difficult to say just when the point of transition from "day" to "night" occurs. Is it at 6:00 p.m.? Is it when we have to turn on the lights on our car? Is it when the evening news begins on T.V.? Is it when a trained observer can see the first star? Is it when a person with 20/20 vision can no longer see more than 20 feet ahead?

There may, of course, be different criteria for different purposes, but it is important to see that a certain amount of arbitrariness may be involved in setting the precise boundaries. This is not necessarily troublesome. It is no different from the situation in which we are attempting to find the point of demarcation between day and night. There is a clear difference between day and night, and there are many times which are either clearly day or clearly night. Nevertheless the precise point of demarcation may have to be established by convention. In the case of proprietary information, the courts ultimately establish these conventions. The conventions established by the courts may or may not be the most desirable from a moral standpoint, but in other areas there are no such conventions. In many cases, these conventions should be established by the professional community—for example, in determining how safe is safe enough.

Resolving Conflict Problems

Lata has a problem. A compound emitted from the stack of the plant where she is employed has been linked by several studies to respiratory problems that can be severe in a small percentage of the population. The Pollution Control Board(PCB) has not banned the compound, perhaps because it is relatively rare in industrial processes. Its elimination will be expensive, and it may force the elimination of the product line. This would lead to loss of a number of jobs in a small community that is heavily dependent on the plant for employment. An added dimension is that the product line could become very successful in the future, thus adding jobs in the community, which is in need of more jobs.

Lata's supervisor instructs her not to bring up the issue in hearings with the PCB officials. He believes he has a good chance of delaying any final action on the issue for several years at least, and by that time a modification in the process may eliminate the emission itself. He argues that the evidence for the health problems supposedly produced by the compound is questionable, and that the health problems are not fatal in any case. "I'm going to fight them as long as I can on this one," he says. How should Lata respond?

Lata finds herself in a conflict problem, pulled by two opposing obligations, both of which find justification in her professional code. On the one hand, the first Fundamental Canon" of the code of ethics of the National Society of Professional Engineers (NSPE) says: "Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties." On the other hand, the fourth Fundamental Canon of the NSPE code says, "Engineers shall act in professional matters for each employer or client as faithful agents or trustees." (Refer chapter VIII for the code of ethics)

Furthermore, the obligation to the public itself pulls her in two different directions. Lata rightly believes she has an obligation to protect the physical health of the community. But doesn't she have an obligation to be concerned with the economic health of the community as well? In fact, if the people of the community were asked to give advice to Lata they would probably side with the man-

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ager in advocating that the new product line be continued, with its promise of more jobs and wealth for the community. They would do this, even though they would also be the ones most likely to suffer from the respiratory problems. This being the case, does Lata have a right to act in a paternalistic way toward her fellow employees, deciding that their economic well being is not as important as their health ?

Conflicts between competing obligations, both of which appear to be valid, are common features of life. The conflicts that give us trouble are not those between good and bad, but between good and good, both of which cannot be fully realized. How should we approach such conflicts? Let us consider several ways in which conflict problems can be resolved.

1.Finding the Creative Middle Way.

When faced with two conflicting obligations, both of which appear to be justified, one approach is to try to find a way to satisfy both of them. While it is often not possible to satisfy both moral requirements in their original form, sometimes it is possible to satisfy them in a modified form. Now this may not seem possible, but we must not forget that most general moral rules have an "all other things being equal" qualification implicitly attached to them. Thus the first Fundamental Canon of the NSPE code should probably read, "All other things being equal, engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties." But all things are often not equal. For example, the threat to the safety, health and welfare of the public may be both uncertain and minimal. That is, (1) whether or not the emissions are in fact harmful may itself be a matter of controversy, and (2) there is of yet no evidence that the emissions produce fatal diseases, only significant respiratory problems in a certain small percentage of the population. Furthermore, as we have seen, the obligation to the community may include an obligation to its economic well-being. So the question is what in this case is Lata's obligation to the public.

This is not to say that Lata should unreservedly follow the instructions of her supervisor, for the same problem of specifying how the canon applies may apply to the Fourth Canon as well. What does it mean to act as "faithful agents and trustees" of one's employer? It cannot mean that the engineer is obliged to obey the employer no matter what the employer directs him to do. Virtually everyone would agree that an employee is not obligated to commit murder for an employer. Most people would probably agree that an employee does not have an obligation to vote in elections in accordance with what company management considers to be its best interests. Many would agree that employees do not have to observe a lifestyle that the employer considers "appropriate" for its employees. However, most would probably agree that the employee does have an obligation to be faithful and punctual in work attendance, to devote his energy and attention to the work assigned, and not to steal company property or use company property without permission.

The most obvious criterion for separating legitimate obligations of employees from illegitimate obligations is that the employee has an obligation to perform his assigned function in the workplace and not to do in his or her private life what interferes in a clear and direct way with on-the-job performance, unless a violation of an obligation to the public is involved. But one of the obligations to the public is surely protecting the health and safety of the public. This further explanation of the two norms means that they can be reconciled. According to these further specifications of the two guiding norms, if a product is a serious threat to the safety and health of the public and the employer orders the engineer to conceal this information, the engineer is obligated to disobey the employer, even if the employer is not breaking any law by concealing it.

However, the requirement for acting as "faithful agents and trustees" of the employer does seem to imply at least two limits on the actions of the employee. The first limitation is that the engineer should make his protests in as responsible a manner a possible. This requires respecting the

Engineers have to protect health and safety of the public

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corporate hierarchy where possible and making the protests in a private and non-confrontational way, if possible. The engineer should do everything possible to avoid embarrassing the employer and give the employer the opportunity to correct the problem, insofar as consideration of the well-being of the public permits. The second limitation is that the employee is not to protest about minor risks to the health and safety of the public, if these are in what we might call the normal range of risk.

There is an obvious way to minimize the conflict of these two norms. If there were a complaint mechanism whereby employees could register ethical concerns in a way that would be confidential and not embarrassing to the company, these two norms could be reconciled. If there is no such mechanism, Lata should try to find some way of raising her concerns to higher management in a confidential manner.

It is important to keep in mind that the encouragement to finding a creative middle way between the two norms is not necessarily a moral compromise. Remember that the two norms have great importance from a moral standpoint. If it is possible to still raise the concerns while not directly confronting her manager, Lata should probably take this option. The purpose of moral thinking is not to produce martyrs, but to satisfy as many moral concerns as possible.

2. Employing Lower-Level Considerations

Let us suppose that Lata is unsuccessful in bringing her concerns to the attention of higher management. She feels, furthermore, that her obligation to be a "faithful agent and trustee" of her employer and her obligation to refrain from unnecessarily jeopardizing the jobs of other employees is about evenly balanced against the obligation to protect the public from a somewhat harmful emission. How can she decide?

Sometimes it is permissible in such situations to take into account considerations that might seem to be less relevant otherwise. Suppose you are considering hiring two engineers, one who is more skilled in one area and one in another. When the qualifications are evenly balanced in this way, you might be justified in bringing in other considerations that would not otherwise be relevant, such as the fact that one of the engineers is an avid tennis player. Since you also play tennis several times a week, you decide to choose the person who would make a good tennis partner. Such a consideration would not ordinarily be relevant, but in this case it might be.

Now carry this same logic over to Lata's case. If Lata really believes that her obligations are evenly balanced in this case, it may be justifiable to take into consideration which option is most likely to promote her career advancement. This is not to say that she has failed to consider her own well-being all along. After all, she is one of the employees who might loose her job if the plant closed. But if she observes her professional obligations as outlined in the NSPE code, she would not have made her personal well-being the decisive factor. Now, however, she may be justified in doing just that.

3. Making the Hard Choice

It may not always be possible to reconcile opposing obligations or to drop down to a lower-level consideration. Sometimes no creative middle way is possible. For example, Lata may find that all the managers she approaches are unsympathetic to her concerns. She may also become convinced that the danger posed by the new emission is substantially more severe than she had at first supposed. In this case she may have to bring the issue before the PCB. She may be forced to make a hard choice.

Labeling a decision as an "ethical decision" may disguise the fact that almost every decision holds some ethical issue or impact. Perhaps a better approach would be to develop an ability to judge the ethical implications. What role do my ethics play in this decision? How do I recognize an ethical situation or problem ? What are the warning signs that this may be a tougher decision with deeper

Professional ethics involve right, fairness, truth, perception, values or principles

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issues and wider impact ? Here are some guidelines from Texas Instruments (TI):

- Do I put a monetary value on this decision? Would I make this decision differently if cost were not a factor? Am I putting a monetary value on my ethics ?
- Do words such as right, fairness, truth, perception, values, or principles appear in my reasoning when I am making my decision ?
- Do I feel as if I need to search through TI's standard policies and procedures or contact a TI legal department representative for help with my decision ?
- Do questions of fair treatment arise?
- Do my personal goals or values conflict with my professional ones ?
- Could this decision generate strong feelings or other controversy ?
- Would this pass the newspaper test? How would I feel if this were to appear in my local newspaper tomorrow?
- What does my heart tell me? Do I ponder this decision on the way home ?
- Do I offer myself excuses such as everybody does it, or no one will find out, or I did it for TI?
- Does this decision really need to be made by someone else ? Did I inherit it because someone else doesn't want to make it ?
- How am I going to feel tomorrow if I do this ?

If you face a tough decision and you feel as if you need help, there are many places to turn. Your supervisor or manager is generally the best for that is the one who understands your situation the best. But there are other sources of good information...the open door to higher levels of management. Know what's right. Do what's right.

ALLIGNMENT OF INDIVIDUAL – GROUP – ORGANISATIONAL VALUES

Alignment is the name of the game in business today. Every top-level executive is involved in alignment. Alignment brings order in the organization. There are bound to be differences of opinion among individuals and within groups, which have to be accepted as natural behavior. A leader is a person, who understands this and inspires people, and drives the organization towards a common goal

Alignment is a continuous process. The values of individual, group and organization differ and hence alignment becomes necessary. The issue is how one can successfully carry on the process of alignment. The process involves:

1. Constant two-way communication from top to bottom and bottom to top. What do you communicate? The organizational values need to be communicated clearly. In the first stage, create widespread awareness about the organizational values. Establish firm guidelines on 'Do's and Don'ts' within the organization. This helps in conveying to all the organizational expectations and areas of alignment. Induction training, which is usually given at the time of a person joining the organization, should cover organizational ethics. Formation of ethical committees like it is being done in Wipro, Tata Group, Hindustan Lever etc.. helps in taking care of ethics in the organization. The ethics is promoted, nurtured and encouraged.
2. The whistle blowers are to be protected. These are the people who bring to the notice of employer, any unethical actions.
3. Like Texas Instruments , have consultation to resolve moral and ethical issues faced by the employees. When caught in a dilemma, an employee can contact the center and get moral support and help to resolve the conflict.

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4. In some organizations Ethics Manuals are made available to employees. Some of them go into specific details such as "a long distance call to family from abroad is permitted only if the stay is above 3 days." Such manuals also clearly lay down the punishments for ethics violations.
5. In the organization structure itself, there could be positions for ethics, just as you have Finance, Production etc.

(Refer to the Annexure at the end of the chapter for Texas Instruments)

Case 1:

Ganga is a software engineer working for Alseac Technologies. She was thrilled to receive a job offer from their competitor, Novatex Systems, whom she greatly admired both as an industry leader and as an ideal employer. The position that was offered was just what she had always wanted. She discussed the offer with her husband Vish. He raised couple of questions, which began to trouble her.

He asked her about the big project that she had been working on. He reminded her that she was the driving force behind the project. He said, if you leave Aleseac now, they could be in big trouble. Vish wondered whether her leaving would not be a let down to the company and the whole project team.

Vish reminded her about her criticizing their friend who had joined a competitor firm and taken away the accounts from his previous employer. Ganga had done well in Alseac and the company had treated her well. The issue is what is right for you to do, and not what the company would or would not do. Both are competing firms. It's like switching sides. It's not just loyalty to the company, but to the people you work with.

Novatex needed somebody right away. But they gave her some more time to think about the offer It was a big opportunity as far as she was concerned.

Her conversations with Vish had troubled her and she started wondering whether she would be right in accepting an offer which she had wanted so much.

Questions for discussion

1. What should Ganga Do? What ideals, obligations and effects should she take into account when making her decisions?
2. Would it be unprofessional of Ganga to drop everything and move to Novatex ? Would it show lack of integrity? Could moving abruptly have negative career consequences for her?
3. Is it morally wrong, morally permissible or morally required to take up the new job? Examine Ganga's choice from a utilitarian point of view.
4. What does loyalty to the company mean and how important is it morally? Under what circumstances, if any, do employees owe loyalty to their employees? When, if ever, do they owe loyalty to their colleagues?

Case 2 :

Narendra grew up in a slum outside the city of Chennai. Through his hard work, talent and luck he completed his engineering from a reputed institution and joined Serve Ltd (SL). The company reimbursed him up to Rs. 2,000 towards house rent, utilities and services. This was done to avoid their employees staying in unsafe and poor quality housing. SL intention was to see that the employees live in a style that was appropriate to the company's image.

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To claim the housing allowance, the employee was required to produce the rent receipt every month. Narendra worked hard, traveled and frequently on business. He never entertained his colleagues at his home. From a casual conversation with a customer, Narendra's colleague Gautam came to know that Narendra was staying in Sowcarpet. Gautam knew that the area had only low rental houses. He kept quite and did not inform anyone till he confirmed his suspicions. On enquiries, Gautam found out that the rent in that area was in the region of Rs. 300 to 500 per month. Gautam reported the matter to their General Manager. He called Narendra and asked him how much rent he was paying. He said he was paying less than what the company gave him. He defended his action by asking what was wrong in staying economically. The G.M felt that Narendra's housing arrangement was not in keeping with his professional standing. It was insulting to say that an SL employee was staying in such type of a house. Besides, Narendra falsified the rent receipt every month, which he readily admitted.

Questions for discussions

1. Did Narendra act wrongly? Explain why or why not.
2. Was Gautam right in confirming and reporting the matter to the G.M? What would you do, if you were in place of Gautam and G.M?
3. Should Narendra be asked to leave? Should he be given some other punishment? What should be the punishment?
4. Is SL housing policy fair and reasonable? Is it culturally biased?

Case 3 :

Preethi was working in Standard Limited for nearly a decade. It was a very large corporation. She liked the friendly work environment. Once she prepared a list and pinned it up on the board outside her office. Preethi did not want to be unfriendly. The list was:

Ethically Dubious Employee Conduct

1. Taking office supplies home for personal use
2. Using office telephone for personal, long distance phone calls
3. Making copies of personal documents on the office machine
4. Charging postage for your personal mail to the company.
5. Making non- official trips in a company car
6. Taking a full day off to attend a seminar for a day but attend it only for half a day.
7. Taking a taxi when the destination is a short walk away.

Questions for discussion

1. Review each item on the list and assess the conduct. Do you feel it morally acceptable, unacceptable or in between. Explain.
2. What obligation does employee have to their employers?
3. As Preethi, what will you do if you find fellow employee engaging in ethically dubious conduct?

EXERCISE

1. Debate on Employee Loyalty and Rights.
2. Debate 'are unions a boon or a bane' ?

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ANNEXURE

Advice from the Texas Instruments Ethics Office

Ethics Help-Line

The Help-Line is intended to provide advice for engineers, scientists, and trainees encountering ethical problems in their work. A principal goal of this Help-Line is to assist scientists and engineers in maintaining high ethical standards and in acting wisely when confronted with multiple and potentially conflicting responsibilities, even where this may lead to conflicts with organizational superiors.

The list contain a selection of advice from The Ethics Office at Texas Instruments Corporation.

Responsibilities, Rights and Obligations vis a vis the Company

- Company Resources Used for Personal Benefit
- Ethical Issues in Company Travel

Responsibilities, Rights and Obligations vis a vis Co-workers

- Favoritism in the Workplace
- Gossiping at Work
- Individual Privacy
- Responsibilities as a Team Leader
- Responsibilities as a Team Member
- Sexual Harassment

Professional Ethics for Engineers

- Entertainment, Gifts – Avoiding Bribes & Conflict of Interest
- Signing Off on Engineering Documents
- Mischarging Time – Financial Fraud

Intellectual Property

Intellectual property – Copyrights and Patents

- Proprietary and Other Sensitive Information
- Software Piracy vs. Legal Copying
- Software, Bringing Your Own to Work
- Benchmarking and Reverse Engineering

Confidentiality

Privacy, Confidentiality & Telephone Use

Advice for how to protect Proprietary Information and Sensitive Information by Monitoring the use of electronic data processing.

TI policies and practices regarding telephone monitoring clarified.

How to deal with sensitive competitive information if gained accidentally Sensitive information belonging to another company must never be solicited or accepted by a Texas engineer unless there is an appropriate signed document, such as a non-disclosure agreement. But what if we receive that information accidentally through no intent or effort on our own?

"After Hours" Security Searches Help TI Safeguard Sensitive Information TI and the government are both very concerned over information security—particularly in high security areas.

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Violations have occurred in the past and TI must do whatever is necessary to maintain compliance.

Professional Secrecy is given in the Code of Ethics of Quebec Engineers of the Order of Quebec Engineers (OIQ).

Ethics Organization at TEXAS INSTRUMENTS (TI)

The TI Ethics Director is commissioned to ensure that all of the company guidelines remain aligned with ethical standards. His reporting chain is through an oversight group, the TI Ethics Committee, which reports to the Audit Committee of the Board of Directors. The TI Ethics Director is also responsible for updating the TI Ethics Committee, the Audit Committee of the Board of Directors, and the president and CEO on a regular basis.

The TI Ethics Committee was established in 1987 concurrently with the TI Ethics Office and consists of five high-level TI managers. This committee is chartered to oversee the activities of the TI Ethics Office, review and approve ethics-related policies, procedures, and primary publications, monitor compliance to laws and regulations as well as ethical practices, review any major ethical issues that may arise from time to time and approve appropriate corrective actions.

Short Questions

1. What is Collegiality?
2. What is Loyalty?
3. Differentiate between collegiality and loyalty
4. What is collective bargaining?
5. What is negotiation?
6. What are occupational crimes?
7. Differentiate between bribe and gift.

Long Questions

1. How will you resolve your moral conflict?
2. Explain the concept of Conflict of interest with examples from consulting engineers.
3. What is confidentiality and how will you maintain it?
4. "Respect for authority creates lot of conflicts in employees" – Discuss the statement with examples.
5. Evaluate the efforts taken by Texas Instruments to promote ethics in the organization.
6. How do you allign personal and professional ethics ?

References:

1. A & M University
2. Texas Instruments
3. Online ethics

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