APLLICATION OF ENGINEERING ETHICS THROUGH EFFECTIVE COMMUNICATION: ISSUES AND CHALLENGES

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Abstract: The profession of Engineering is one of the highly acclaimed professions. As the active members of this profession, engineers are expected to possess and practice ethical standards. The invaluable services offered by professionals require honesty, impartiality, fairness, integrity and equity. They should devote themselves for all-round social welfare. Engineers should perform their duties with utmost care and concern. Through effective communication, Engineering Professionals can promote ethical practices. This paper explores application engineering ethics through effective communication.

Introduction

Ethics indicates specific set of value factors for engineering profession. Collins' Concise English Dictionary defines ethics as "the study of the moral value of human conduct and the rules and principles that ought to govern it" (Collins, 1986). Engineering ethics is a key practice for engineering discipline and engineering principle management. While many organizations/institutions have codes of practice or policies and engineers are often encountered with specific situations where they require making their own ethical decisions. This is why it is imperative that when faced with such situations engineering professionals should be equipped with the skills to take the right decision. In making such decision and developing a strong network of ethical practices, organizations have to heavily rely upon principles and mode of communication. Even though there are so many types of media present today like email, websites, videos etc., available and helpful for better business communication.

Literature Review

No law binds engineers to abide by the code of ethics of their professional organization, such as the legally binding expectation of professional conduct in the practice of law (Davis, 1991). Installe (1996) promotes a systems approach philosophy to teaching engineering that includes developing communication skills among future engineers and a multi-disciplinary approach to problem-solving which includes the analysis of economic, ecological and social issues. Kiepas (1997) explains that "the global problems of modern civilization and the perspective of the post-

modern future increase the role of ethical factors as regulators of actions in modern technology" Herkert (1997) placed the responsibility for ethics education with the universities, stressing its importance as a part of the engineering curricula to bridge the gap between technology and society. Modern codes of ethics have now moved their focus to include these issues and to "emphasis the public interest as a criterion for professional responsibility" (Coates, 2000). Moriarty (2001) commented that "More and more, socially and environmentally responsible engineering ventures are garnering positive social regards".

Davis (2001) has the view that a code of ethics is not a set of laws inscribed with divine wisdom in a stone tablet to be obeyed by all. A professional code of engineering ethics is a set of rules that is supposed to win the support of engineers. Keirl (2003) suggested that educators promote an ethical culture for engineering education based on three elements that should lead to understanding the relationship. Keirl listed these as knowledge, attitudes and skills.

Seedhouse (2005) explains that most decisions can be traced back to a value of some description. He explains that, based on our values, we tend to classify other people from a value viewpoint. The ethical conduct of various engineering professions varies across different zones and engineering profession. (Schinzinger & Martin, 2005) The most recent survey in 2009 reported, confirming previous findings, that there's a strong association between raising awareness for ethics and a strengthening ethical culture (Verschoor 2010).

Research Methodology

The profession of engineering is considered as a very vital profession which is full of challenges and opportunities. Engineers are often confronted with ethically complex situations. was a study conducted on the basis of secondary data available from various sources along with litera-

ture review. In literature review, research papers from 1991 to 2010 were studied and significant results were taken from these studies. The secondary data was collected form magazine, books, internet, industry journals etc.

Literature review has shown prior research work done in this area. Significant inputs were found in the subject matter with reference to application engineering ethics through effective communication.

Engineering Ethics

Ethics are the rules and standards which govern the conduct of engineers in their role and responsibilities as professionals. Engineering Ethics is the study of moral issues and decisions confronting individuals and organizations engaged in engineering. It studies questions related moral ideals, character, policies and relationship of people and corporations involved in technological activity.

Engineering ethics are similar to general ethics but apply to the specific issues which affect engineering professionals. Each and every engineering professional shall be responsible for upholding the engineering profession with all integrity, dignity and honor. One should utilize the professional skills for the welfare of human and society.

Engineering Professional shall be honest and not partial; serving for the society and clients as employee. At the same one is expected to improve the dignity and prestige of engineering profession. Ethical education should prepare students for the requirements and pressures of the workforce. Engineering ethics highlights the moral and legal obligations that engineers should have to the public, clients and society at large.

Engineering Ethics & Communication

To promote ethical behavior, engineering professionals need to be knowledgeable about ethics –codes of conduct, ethical decision-making, and cultural and generational differences around ethics, Transparency, fairness and communication are keys to establishing and maintaining an ethical workplace. Effective communication helps to manage the technology. The active promoters should understand the impact and benefits of the communication. Engineers shall build their professional communication on the merit of their latent skills and shall not become victims of rumour mill. Ethics and communication are closely related. Communication approaches such as Dialogue allow engineering professionals to share ideas and beliefs in a safe environment free of judgments and assumptions. An ethical culture is developed through communication, rules, leadership, reward, rituals and stories.

Issues and Challenges

Engineering Professionals must be honest, fair, sensitive and respectful in communicating with one another and in communicating with customers, vendors and the public. They should keep honest. It refers to telling the truth in its entirety. Using exaggeration or manipulation seems to be common in business, both in internal communication and external communication. When honesty is compromised, profession and professionals can lose credibility and respect. Engineering Professionals need to steer clear of communication practices that can lead to accusations of favoritism. Listening and informing helps to develop leadership skills and set ethical standards high of engineering professionals.

While normative expectations are clearly provided through legal rulings, regulatory agencies decrees, professional codes, organizational policies and social mores, if these are not communicated well, and acted upon, the message will not be understood and solved the purpose.

By following principles of 6 C's—Clarity, Conciseness, Courtesy, Consideration, Completeness and Correctness, Engineering professionals can build an environment of honesty and integrity. They can use modern technology driven communication tools like as Blogs, Facebook, Twitter, E-mails etc. to maintain their transparency and visibility on high note and at the same time they can keep their doors of communication open and reliable. Engineering professionals like other progressions in a business set up, have to maintain very strong relationship with the stakeholders in such situations they have to be very flexible, confident and derive optimum benefits of various forms of communication like as inward or downward or horizontal or diagonal. Engineering professionals should keep confidentiality and secrecy of their profession and should not leak out the information or source of information.

It is a fact that engineers rarely talk about ethics directly. They talk instead mostly talk about organizational interests, practicality, technical know-how and economic good sense. They struggle with ethical issues, but don't talk to one another about it much. While communicating and enhancing professional ethics, engineering professionals may encounter communication barriers like emotions, closed mind, status consciousness, psychological etc. but in order to succeed they have to cultivate a cogent environment of trust and understanding. They should issue public statements only in an objective and truthful manner.

Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest. Engineering professionals must avoid moral muteness through communication. Good leadership skills will certainly help create a strong corporate culture of ethics/compliance. Hence, it is realized that talking the talk and walking the walk both are essential in practicing ethics at workplace.

Conclusions

Undoubtedly, it is prime responsibility of an engineering professional to solve the technical problems but it is also the duty of engineers to adhere and follow ethical standards. At times they are compelled to get involve with unethical or illegal behavior to meet the expectations. Engineering ethics practices shall ensure high level delivery of professional conduct. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.

Effective communication approach enables the engineering professionals to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions in ethical manner. Leadership brings about short term change, but long term changes demand shared values and expressions which provide a common platform for resolving problems and accomplishing objectives. Thus, engineering professionals should follow clear, consistent and credible messages across communication lines to pursue ethical standards.

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