

Social and Ethical Aspects in Engineering

IME-251

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Week2 Agenda

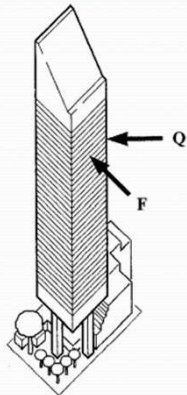
- Accepting and Sharing Responsibilities

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2

Example of a Responsible Engineer

- Saving the Citicorp Tower



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3

Meanings of 'Responsibility'

- *Obligations*
- *Accountable*
 - Voluntary Wrongdoing
 - Unintentional Negligence
- *Conscientious*
 - An Excellence of Character
- *Blameworthy / Praiseworthy*
 - Who is responsible for designing the Antenna Tower?

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4

Types of 'Responsibility'

- Moral responsibility
- Causal Responsibility
- Job Responsibility
- Legal Responsibility

Engineering as a Profession

- Advanced Expertise
 - Knowledge
 - Skill
- Self-Regulation
 - Autonomy of Profession
- Public Good
 - Public's well-being, Safety, Health etc.

❑ What about Individual Businesses like a Barber's Shop?

❑ Need of Morally Committed Professional Society and Preventive Ethics?

Ethical Corporations

- Story of Enron – an unethical corporation!!!
- Shareholder's theory
 - Social Responsibility of a Business is to increase its Profits
- Need for Social Responsibility Movement
- Dilemma of Social Responsibility

Senses of Corporate Responsibility

- A Collective Responsibility
- Accountability
- Virtue of Responsibility
- Corporational 'Blameworthiness' or 'Praiseworthiness'

Discussion Questions

1. As soon as he identified the structural danger in the Citicorp building, should LeMessurier have notified the workers in the building, surrounding neighbors, and the general public who might do business in the building? Or was it enough that he made sure evacuation plans were in place and that he was prepared to provide warning to people affected in the event of a major storm?

Discussion Questions

2. Laws play an enormously important role in engineering, but sometimes they overshadow and even threaten morally responsible conduct. Thus, attorneys often advise individuals not to admit responsibility. Bring to mind some occasions where that is good advice. Then discuss whether it would have been sound advice to LeMessurier in the Citicorp Tower case.

Discussion Questions

3. Michael Davis defines professions as follows: "A profession is a number of individuals in the same occupation voluntarily organized to earn a living by openly serving a certain moral ideal in a morally permissible way beyond what law, market, and [everyday] morality would otherwise require."²² He argues that carpenters, barbers, porters, and other groups who organize their work around a shared code of ethics should be recognized as professionals. Do you agree or disagree, and why? Can this issue be settled by reference to a dictionary?

Discussion Questions

4. Disputes arise over how a person becomes or should become a member of an accepted profession. Such disputes often occur in engineering. Each of the following has been proposed as a criterion for being a "professional engineer" in the United States. Assess these definitions to determine which, if any, captures what you think should be part of the meaning of "engineers."
 - a. Earning a bachelor's degree in engineering at a school approved by the Accreditation Board for Engineering and Technology. (If applied in retrospect, this would rule out Leonardo da Vinci, Thomas Edison, and Nikola Tesla.)
 - b. Performing work commonly recognized as what engineers do. (This rules out many engineers who have become full-time managers but embraces some people who do not hold engineering degrees.)

Discussion Questions

- c. In the United States, being officially registered and licensed as a professional engineer (PE). Becoming registered typically includes: (1) passing the Engineer-in-Training Examination or Professional Engineer Associate Examination shortly before or after graduation from an engineering school, (2) working four to five years at responsible engineering, (3) passing a professional examination, and (4) paying the requisite registration fees. (Only those engineers whose work directly affects public safety and who sign official documents such as drawings for buildings are required to be registered as PEs. Engineers who practice in manufacturing or teach at engineering schools are exempt. Nevertheless, many acquire their PE licenses out of respect for the profession or for prestige.)
- d. Acting in morally responsible ways while practicing engineering. The standards for responsible conduct might be those specified in engineering codes of ethics or an even fuller set of valid standards. (This rules out scoundrels, no matter how creative they may be in the practice of engineering.)

13

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Discussion Questions

- 5. Milton Friedman argues that the sole responsibility of managers is to stockholders, to maximize their profits within the bounds of law and without committing fraud. An alternative view is stakeholder theory: Managers have responsibilities to all individuals and organizations that make contracts with a corporation or otherwise are directly affected by them.²³ Clarify what you see as the implications of these alternative views as they apply to decisions about relocating a manufacturing facility to lower costs for workers' salaries. Then present and defend your view as to which of these positions is the more defensible morally.

14

Discussion Questions

- 6. Enron CEO Kenneth Lay betrayed his employees by strongly encouraging them to purchase Enron stock, even after he knew the stock was in trouble—indeed, because he knew it was in trouble—and had begun to sell large amounts of his own shares. In addition, when the stock meltdown began, a company policy prevented employees from selling their stock until it became worthless, thereby causing huge losses in employee retirement programs. Friedman and stakeholder theory would join in condemning such practices. What might each say, however, about Enron's "rank and yank" program? According to one account, every six months all employees were ranked on a 1-to-5 scale, with managers forced to place 15 percent of employees in the lowest category.²⁴ Those ranked lowest were given six months to improve, although usually they were given severance packages, especially because at the next six-month ranking the 15 percent rule still applied. What are the pros and cons of such employee policies for sustaining both an ethical climate and excellence?

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15

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16

Q & A