

Engineering ethics and the global public

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Individually, the employee-engineer seldom views his or her actions as being responsive to a public interest; but, in fact, this is the case for practically all engineers. A public interest defines the products a company makes, the research performed by governments or the actions of consulting engineers. Engineering ethics should be examined in this context.

Broadly speaking, the development of engineering ethics is an attempt to provide behavioral norms for an engineer that will respect other engineers, managed employees, co-workers, the engineering profession and, above all, the public.

The IEEE Constitution calls all IEEE members to the following professional goal:

"The IEEE shall strive to enhance the quality of life for all people throughout the world through the constructive application of technology in its fields of competence. It shall endeavor to promote understanding of the influence of such technology on the public welfare." (Article 1, Sec. 2)

"The character of its scope is transnational and the territory in which its operations are to be conducted is the entire world. In addition to its worldwide operations, the IEEE may engage in activities directed to the needs and interests of its members residing in a particular country or area of the world." (Article 1, Sec. 3)

GLOBAL VIEW. The public interest here is defined as both local and global. This poses a special challenge for those who wish to define ethical guidelines for engineers. Ethical behavior of engineers alone is important, but the employer, whether it be a corporation, a government, a university or a private firm, must also be held accountable. Engineers therefore must be challenged to put the public interest ahead of loyalty to the employer if there is an ethical conflict.

The engineering professions, and specifically the IEEE, need not only to encourage engineers to behave ethically, by providing guidance and examples, but also need to provide a support structure of personal, financial and legal resources for engineers who suffer loss as a result of behaving ethically.

Individual engineers may observe unethical behavior around their own workplace — shaving test results to qualify a substandard product for shipping, misappropriating employer resources for personal use, failing to give full time value to the employer. Engineers in corporate management may also observe unethical corporate behavior — influencing individuals to share the results of a competitive bid, underbidding and then

recouping through inflated change-orders, relocating manufacturing operations offshore to avoid environmental laws.

The latter leads directly to a global ethical dilemma: Is it ethical that one group in our society, or in our profession, should thrive only at the expense of another?

Is it ethical to "outsource" manufacturing to countries with lax environmental laws; and to outsource engineering design services to offshore countries paying fractional wages and benefits? There is nothing illegal about this, but is there not an ethical issue within a transnational IEEE, if manufacturing technicians and design engineers in developed countries are being pitted against those in poor countries paying a quarter or less the wages? Should this issue not concern all members of the IEEE, not only to seek measures to protect their own jobs, but to seriously grapple with the broader reasons for this trend, and where it leads our national economies and our profession as a whole?

Are there forms of protectionism that really work for all members of the IEEE? Should there be restrictions on the flight of investment capital offshore? Are we all potential victims of multinational corporations who only value their short-term bottom line, without regard to incidental social and/or environmental destruction?

Or can we rest assured that technology, no matter how developed, is ultimately beneficial to everyone, and everyone must uncomplainingly learn to adapt to whatever social or environmental conditions its unrestrained proliferation imposes?

DEBATE NEEDED. The current erosion in job quality and opportunity for most U.S. engineers should not just be the subject of special "committees on competitiveness" or left to the heads of corporations and governments, but should be vigorously debated by the rank and file members of the IEEE.

An ethics debate should seek the views of IEEE's transnational rank and file, not just the academic and management elite who comprise most committees, and aim to educate our membership to be broadly informed, authoritative voices in the interdisciplinary national and transnational debates.

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