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Case Study: Why didn't the Engineers at Enron question "The Smartest Guys in the Room"?

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Abstract

This case study examines the Enron scandal through the lens of engineering ethics, focusing on the role engineers played in enabling, and failing to prevent, corporate misconduct. Instead of a traditional case study, this paper describes a course module that enables instructors to replicate the learning activity in their classrooms.

Drawing on the documentary "Enron: The Smartest Guys in the Room," student analyses, and guided classroom reflections, this paper explores engineers' involvement in unethical practices, including market manipulation and the creation of artificial energy shortages.

The paper begins with an overview of the Enron scandal, then shifts to the engineer's role. The primary goal here is to critically examine why the engineers made the choices they made. This study is guided by the central research question: Why did engineers at Enron participate in or fail to resist unethical practices, and what can this teach us about preparing engineering students for similar systemic pressures? Once the particulars of the case are in hand, the discussion shifts to strategies for leading students through scaffolded learning toward more ethical responses.

There will be a brief introduction to key ethical theories and some surface-level connections between the theories and the engineers' actions in the Enron scandal. The final section of the paper highlights missed opportunities for ethical intervention and considers how a more substantial commitment to professional responsibility, transparency, and accountability might have altered the outcome. The discussion also examines systemic contributors (e.g., corporate culture, deregulation, and lack of diversity) that fostered ethical blind spots.

By reframing Enron as a cautionary tale for engineering education, this paper aims to equip future engineers with the ethical awareness and courage needed to act as moral agents within complex, hierarchical organizations. The reality is that our students will face the same systemic factors, so we must strengthen engineers' preparation beyond traditional ethics training.

Introduction and Background

Below, the paper presents the elements of a course module that instructors can use as a case study to help engineering students examine the reasons why individuals might act unethically. Instead of a traditional case study, this paper describes a course module that enables instructors to replicate the learning activity in their classrooms.

Professional codes of ethics provide engineers with guidance on ethical conduct and the public interest, but engineering educators must prepare engineering students to navigate unethical situations. In practice, situations don't present themselves as clearly 'right or wrong,' so examining them with an eye toward why decisions are made can be insightful and educational. Ultimately, the purpose of this paper is to ask student engineers to interrogate the situation at hand and the circumstances that led to engineers' complicity in the Enron scandal.

Given the pedagogical goals of this module, this paper explicitly investigates the following research question: Why did engineers at Enron participate in or fail to intervene in unethical practices, and what can this reveal about preparing engineering students for similar pressures? Stating this question directly anchors the analysis and informs the instructional strategies proposed throughout the case study.

To provide sufficient scaffolding, a general background on the Enron scandal is provided, followed by a focus on the engineer's role. There will also be a brief discussion of elements of ethical analysis using key theories. Before concluding, the paper will explore some systemic factors that could improve engineers' preparation beyond ethical training.

This is not intended to be an evidence-based practice paper, but rather a structured set of resources that an instructor could implement in their course as a case study in why unethical decisions are made.

The resources below are the result of a methodological review and curation of the documentary film "Enron: The Smartest Guys in the Room" [1], students' written reflections with guided prompts, and an in-class discussion.

The Energy Industry and the Enron Corporation

Engineers are inherently involved in the production, distribution, and use of energy, a fundamental necessity of modern society. It is both a technical good and a financial good, as energy markets are worth trillions of dollars annually. Whenever a technology is both necessary and lucrative, we must pay close attention to all elements of the system.

In the late 1990s, Enron was a large corporation widely regarded in the energy industry for innovative and effective business practices. The company was primarily involved in many elements of the energy supply chain. The company leveraged a deregulated energy market to capitalize on power generation, transmission, and distribution, thereby creating substantial value for shareholders. The most salient element of their business model centered on energy trading: the notion that energy, as a commodity in an unregulated market, could be bought and sold in response to price fluctuations driven by supply and demand. Essentially, Enron owned power plants and utilities. They would buy and sell electricity to consumers for a profit.

Enron's transition to unethical and illegal practices can be simplified into two categories: 1) accounting fraud and 2) market manipulation. The accounting fraud involved Enron's leadership and its independent auditor, Arthur Andersen & Co. This aspect of the scandal is less relevant to an engineering context and therefore will not be discussed. In short, Enron's accounting was based on fraudulent practices, and the auditor ignored the lies.

From an engineering perspective, Enron used market manipulation to generate unearned revenue. In short, energy traders at Enron persuaded power plant operators and utilities to artificially reduce supply despite demand signals, thereby inflating prices and increasing profits. The entire scheme required the complicit involvement of engineers and power plant operators; therefore, we must question why this was the case.

The Role of Engineers in the Scandal

Below are two explicit examples of how engineering contributed to the Enron scandal. A description of each scheme is given below.

Artificial Shortages

In this scheme, energy traders persuaded power plants to reduce production to exploit demand-side pricing. In simplified terms, the scheme worked as follows:

1. Energy traders would contact power plant operators and suggest that short-term forecasts indicated a reduction in supply would be possible
2. Power plant operators and engineers would reduce generation output
3. The demand forecasts did not materialize, so demand did not actually reduce
4. Since supply reduced and demand did not, the price increased
5. Enron's revenue increased, profits increased, and shareholder value increased; the consumer paid more without any knowledge of why

"Ricochet"

In this scheme, energy traders leveraged Enron's extensive utility and power plant assets to buy and sell energy across systems and state lines. In simplified terms, an example of how the scheme worked follows:

1. An energy trader at Enron would contact System 2 and imply that demand was reducing in System 1, so they would sell electricity from System 1 to System 2. Since System 2 was experiencing a steady or increasing demand, it made sense to purchase the energy.
2. In System 1, supply was reduced (it had been sold to System 2), but since demand was not actually decreasing, the price would increase.
3. Energy traders would then purchase the electricity back from System 2 at the higher price, and the consumer would pay more without any knowledge of why.

In both schemes, energy traders lied to power plant operators and engineers. However, one should also acknowledge that these engineers and power plant operators acted complicitly (knowingly or unknowingly). Outsiders do not know the full details of the behind-the-scenes conversations, but ultimately, the decisions were not grounded in reality.

Considering Students' Ethical Training

In teaching this case study, it is prudent to help engineering students explore the 'right' choices. In both schemes presented above, it seems reasonable to expect that the engineers and powerplant operators could have concluded that the energy traders were not exercising sound judgment. There is no way to know what conversations occurred, only that the outcome favored the traders who fraudulently manipulated the energy market.

With the information at hand, it seems that engineers and power plant operators missed opportunities to intervene ethically by simply asking energy traders 'why' in response to requests that did not appear to reflect reality. In addition to asking 'why,' it seems prudent to say 'no' if the data does not indicate reduced demand as suggested by the energy traders.

Ethical Analysis Using Key Theories

Some institutions may include philosophy and/or ethics courses in the curriculum. In these cases, it may be worthwhile to connect the case study to key theories in ethical philosophy. To aid instructors in offering this additional component, three frameworks are presented below. However, this ethical/philosophical theory discussion may be difficult to contextualize at institutions that don't include formal coursework on these topics, so instructor discretion is encouraged.

Utilitarianism focuses on maximizing well-being for the greatest number of people, so choices are evaluated based on consequences [2]. The framework prompts firms to consider the broader societal impact of their decisions rather than focusing solely on financial gain. Since utilitarian reasoning seeks to minimize harm and maximize collective benefit [3], a company that pursues profit at the expense of public welfare would be acting unethically. In practice, a tool such as cost-benefit analysis is a form of utilitarian reasoning. It can help assess whether policies or business actions yield a net positive outcome for society [4].

Deontological ethics holds that specific duties (e.g., honesty, respect, and fairness) are morally binding regardless of consequences, making them obligations rather than options. Since deontology treats people as much more than a means to an end, withholding information or misleading the public violates the duty to respect individual dignity [5]. As a duty, the framework requires adherence to principled rules (including commitments to truthfulness and openness) even when doing so may be inconvenient or costly [6]. In practice, a duty-based approach protects public welfare by ensuring that decisions are made through processes grounded in integrity, accountability, and respect for all stakeholders [7].

Virtue ethics emphasizes the development of moral character, arguing that ethical behavior arises from cultivating stable virtues such as integrity, courage, and practical wisdom. The philosophy reflects Aristotle's view that "excellence…is a habit" [8], so one must become the kind of person who habitually acts well (instead of needing rules or consequences). Integrity (e.g., aligning actions with values) and courage (e.g., upholding values under pressure) are considered essential components of good character [9]. By prioritizing the cultivation of virtuous dispositions, virtue ethics frames moral life as an ongoing process of self-cultivation toward becoming a person capable of consistently ethical action.

Connecting to NSPE's Code of Ethics

To aid in ethical analysis, the NSPE Code of Ethics [10] can highlight how actions within the scandal violated or conflicted with each fundamental canon and what a more ethical choice would have been. Table 1 summarizes the analysis.

Table 1: Summary of NSPE Ethical Canons and Enron Case

Fundamental Canon	Violation/Conflict	Ethical Expectation
Hold paramount the safety, health, and welfare of the public.	Ricochet created artificial shortages, leading to rolling blackouts and inflated energy prices in California. These harmed millions of residents and businesses.	Engineers should have refused to participate in any system design or operational strategy that endangered public welfare.
Perform services only in areas of their competence.	-	-

Issue public statements only in an objective and truthful manner.	Internal communications and reporting often omitted the true nature of these schemes, misleading regulators and stakeholders.	Engineers should have disclosed the operational risks and the unethical nature of these practices in a truthful manner.
Act for each employer or client as a faithful agent or trustee.	Engineers acted as loyal agents for Enron but neglected their higher duty to the public interest.	When client directives conflict with public welfare, engineers must prioritize ethical obligations—even if it means withdrawing from the project.
Avoid deceptive acts.	Ricochet involved routing electricity through out-of-state transactions to disguise its origin and evade price caps—a deliberate act of deception.	Engineers were obligated to avoid creating or enabling systems that misrepresented transactions or market conditions.
Conduct themselves honorably, responsibly, ethically, and lawfully to enhance the honor, reputation, and usefulness of the profession.	-	-

Systemic Factors and Ethical Blind Spots

The Enron scandal exposed systemic factors and ethical blind spots that created fertile ground for misconduct. A corporate culture that prioritized profit over ethics exerted intense pressure on employees to deliver financial gains, often at the expense of public welfare. Deregulation amplified these risks by enabling the aforementioned schemes with minimal oversight. Within this high-pressure environment, many engineers rationalized unethical actions as "just following orders," a mindset that becomes normalized in hierarchical, performance-driven industries. Compounding these issues was a lack of diversity, equity, and inclusion (DEI), which limited the range of perspectives and ethical resilience in decision-making. Greater DEI could have fostered broader viewpoints, challenged groupthink, and strengthened the moral courage needed to resist unethical directives.

Conclusion

The Enron scandal underscores the need to integrate ethics into technical coursework for engineers. Technical competence alone is insufficient when professionals operate within complex systems where decisions carry profound societal consequences. Embedding ethical reasoning alongside engineering fundamentals ensures that future engineers are equipped not only to solve technical problems but also to recognize and resist unethical practices.

Case-based learning and documentary analysis, such as examining 'Enron: The Smartest Guys in the Room,' provide powerful tools for bridging theory and practice. These approaches allow students to interrogate real-world failures, understand systemic pressures, and explore the interplay between individual choices and organizational culture. By engaging with authentic scenarios, students develop the critical thinking skills necessary to navigate ambiguity and uphold professional integrity.

Encouraging moral agency and ethical leadership must become a central goal of engineering education. Engineers should see themselves as stewards of public welfare, empowered to speak up and act when confronted with misconduct. Cultivating virtues such as courage, integrity, and accountability prepares graduates to lead ethically, even in environments where profit and pressure dominate decision-making.

The lessons from Enron are clear: unchecked pursuit of profit, coupled with ethical blind spots, can lead to catastrophic outcomes. Engineers were not passive bystanders—they were active participants whose silence and complicity amplified harm. This case reminds us that ethical lapses are rarely isolated; they emerge from systemic failures and cultural norms that prioritize short-term gains over long-term responsibility.

While the ethical case study leads to conclusions about the engineers' missed opportunities for intervention and the moral failures within the Enron scandal, the conclusion of this paper serves a different purpose: it synthesizes these insights into pedagogical recommendations for strengthening ethics education in engineering.

Educators and institutions must respond with a call to action: embed ethics deeply into curricula, foster interdisciplinary dialogue, and create spaces where students can practice ethical reasoning in realistic contexts. Accreditation bodies and professional societies should reinforce these priorities, ensuring that ethics is treated as a core competency rather than an ancillary topic.

Looking ahead, ethics instruction in engineering should evolve beyond compliance-based models toward transformative learning experiences. Future directions include integrating diversity, equity, and inclusion to broaden perspectives, leveraging emerging technologies for immersive case simulations, and emphasizing the development of moral character alongside technical expertise. By doing so, we prepare engineers not only to design systems but to safeguard the trust and well-being of the societies they serve.

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Supplementary Materials

Please contact Shaz Vijlee (vijlee@up.edu) with any questions or inquiries about specific supplementary materials.

Bibliography

1. A. Gibney, "Enron: The Smartest Guys in the Room", Magnolia Pictures, United States, (Apr. 22, 2005).

2. PhilosophiesOfLife.org, "Utilitarianism Explained: Key Principles, History, Applications, and Modern Perspectives," PhilosophiesOfLife.org, Nov. 08, 2025. https://philosophiesoflife.org/utilitarianism/

3. A. Leontis, "Understanding Utilitarianism: A Guide," *philosophos.org*, Dec. 17, 2025. https://www.philosophos.org/ethics-utilitarianism

4. R. Krishna, "The Impact Of Utilitarianism On Public Policy Formulation," International Journal of Research and Analytical Reviews, vol. 9, no. 1, March 2022, https://ijrar.org/papers/IJRAR22A2929.pdf

5. The Arthur W. Page Center, "Ethical Orientations: Deontology," Dec, 17, 2025

https://archive.pagecentertraining.psu.edu/public-relations-ethics/core-ethical-principles/lesson-1-title/ethical-orientations-deontology/

6. A. Leontis, "Deontology: Understanding Ethics and Morality," *philosophos.org*, Dec. 17, 2025. https://www.philosophos.org/ethics-and-morality-deontology

7. U. Iyioke, "Appraising Utilitarian and Deontological Ethics for Public Policy Framers," Journal of Languages, Linguistics and Literature, vol. 12, 2024, https://usemjournal.com/pdf/usem-2023-titles/appraising-utilitarian-and-deontological-ethics-for-public-policy-framers.pdf

8. B. Shea, "Chapter 4: Virtue Ethics – The Role of Character in Moral Philosophy – Ethical Explorations: Moral Dilemmas in a Universe of Possibilities," in *Ethical Explorations: Moral Dilemmas in a Universe of Possibilities,* Rochester, MN: Thoughtful Noodle Books, 2023.

9. K. Timpe, "Moral Character," Internet Encyclopedia of Philosophy, Dec. 17, 2025. https://iep.utm.edu/moral-ch/

10. NSPE, "NSPE Code of Ethics for Engineers | National Society of Professional Engineers," Nspe.org, 2019. https://www.nspe.org/career-growth/nspe-code-ethics-engineers