ETHICAL BEHAVIOR

THE KEY TO EARNING TRUST

Presented by
Stuart G. Walesh, PhD, PE
D.WRE, Dist.M.ASCE, F.NSPE
Consultant and Author
stuwalesh@comcast.net

ASCE | KNOWLEDGE & LEARNING

www.HelpingYouEngineerYourFuture.com
www.linkedin.com/in/stuwalesh

ASCE | KNOWLEDGE & LEARNING

Note to site coordinators about distributing copies of this PowerPoint PDF to webinar participants

All slides are designed to be easily read when printed at the established three slides per page.

Appendices will not be included in the presentation. Accordingly, they use smaller font sizes but can still be easily read, assuming the PDF is printed at three slides per page.

Please distribute hard copies at the webinar just before it begins.

Note to webinar participants about this PowerPoint PDF

The handout is intended to supplement the webinar in three ways:

- Provide brief text and visuals that reinforce or illustrate the webinar leader's presentation.
- Provide a basis/place for taking notes during the webinar.
- Provide additional material (e.g., the appendices) for self or group study after the webinar.

This handout is not intended to be a self-standing document, that is, the handout has minimal value to a non-participant.

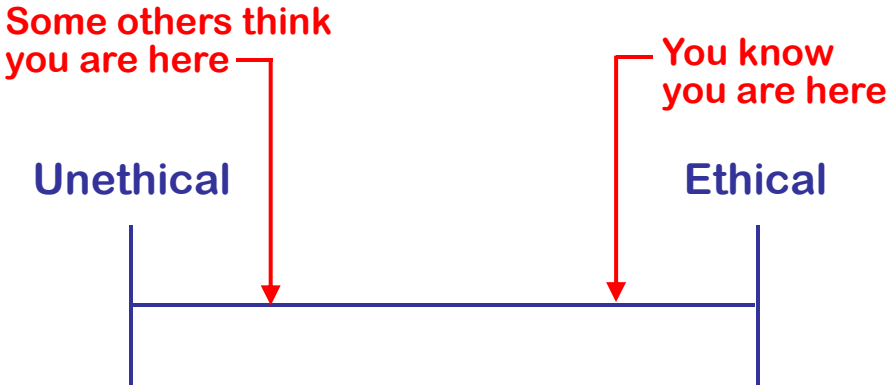
ETHICAL BEHAVIOR:
THE KEY TO EARNING TRUST

I draw on my experiences in the public, private, and academic sectors; on my research; and on lessons learned from many and diverse ethical situations

As a result of this webinar, you should be able to answer these three questions:

- Why study ethics?
- What is ethics?
- How can we make ethical decisions?

Where are you on the ethics scale?



APPENDICES

A: RESOURCES FOR FURTHER STUDY

B: PRESENTER

C: ETHICS DILEMMAS

D: DOES ETHICAL BEHAVIOR "PAY?"

E: THE FIVE "A"s OF REBUILDING TRUST

F: WHAT OTHERS SAY ABOUT TRUST

TOPICS

WHY STUDY ETHICS?

WHAT IS ETHICS?

HOW CAN WE MAKE ETHICAL DECISIONS?

CASE STUDIES

RECAP

Why study ethics?

Earn CEUs/PDHs

Earn and maintain trust

Trust is valued because it is:

Touchy/feely, soft, frosting on the cake

You can "take it to the bank"

Trust – Inter-organization

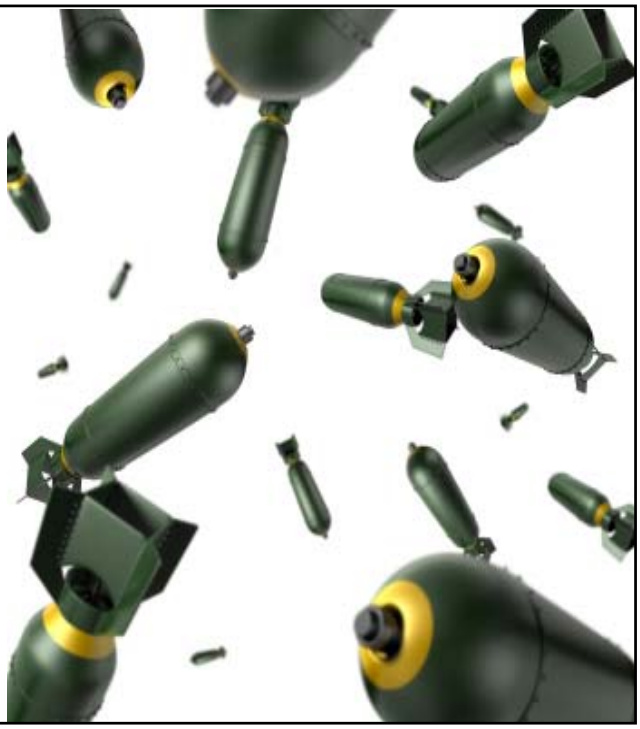
Trust – Intra-organization

One more

Earn and maintain trust

story

We are sometimes bombarded by ethical questions—many are "little" and easy to resolve and some are "big"



/ASCEEthicsWebinar

Examples of ethical situations that may be encountered within the consulting/government/ academic/volunteer environment

- Be tempted or implicitly/explicitly directed to incorrectly bill your time
- Acquire sensitive information about a client and share it with a third party outside of your employer
- Plagiarize a paper assigned in a graduate school class

/ASCEEthicsWebinar

16

- Obtain negative information about a competitor and consider providing it to a client or a potential client
- Be asked or tempted to significantly embellish your resume
- Fail to keep your resume current
- Discover and hide an error in plans and/or specifications for a project that is under construction

- Copy another student's laboratory report
- Observe unfair treatment of another employee and not take action
- Accept a substantial gift offered by a vendor
- Cheat on a test

- Be a member of a project team, believe that the facilities being considered by the team would have a significant negative impact on the environment, and do nothing
- Criticize the findings and/or recommendations of another consulting firm
- Participate in an interview in which you suspect that the team representing your company would not, if your firm was selected, be the team that would actually provide the services (bait and switch)
- Others?

Greatest compliment that can be given to a consultant (individual or firm)?

Sole source selection!

This simple?

Competence + Ethical Behavior = Sole Source Selection

TOPICS

WHY STUDY ETHICS?

WHAT IS ETHICS?

HOW CAN WE MAKE ETHICAL DECISIONS?

CASE STUDIES

RECAP

Is ethics the same as law?

Do ethics and law overlap?

Are unethical and illegal acts the same?

Is ethical behavior the same as moral behavior?

Is ethics something you have or something you do?

Some definitions

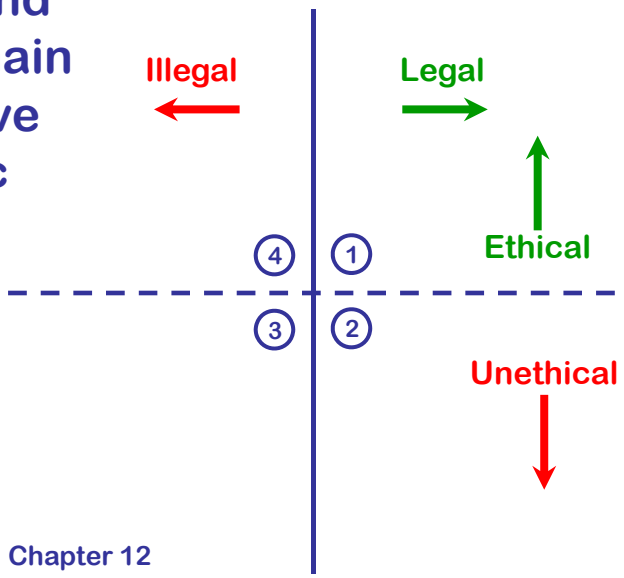
"Ethical conduct is… behavior desired by society which is above and beyond the minimum standards established by law" (Onsrud 1987).

"…the study of systematic methodologies… [that] can be useful in making value-laden decisions" (Vesilind 1988).

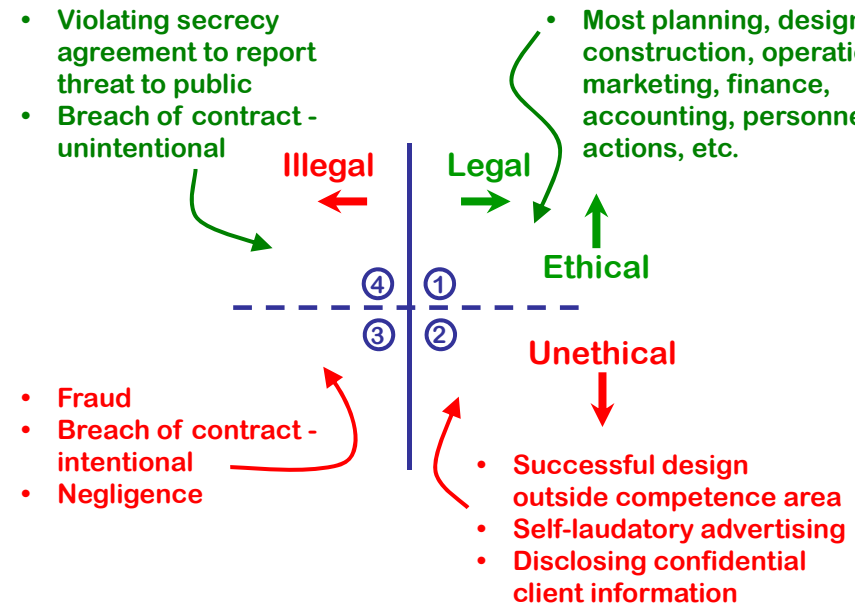
"…the study of moral decisions that must be made by engineers in the course of engineering practice" (Fleddermann, 1999).

Ethics: The process used to make value-laden decisions beyond the law in professional matters

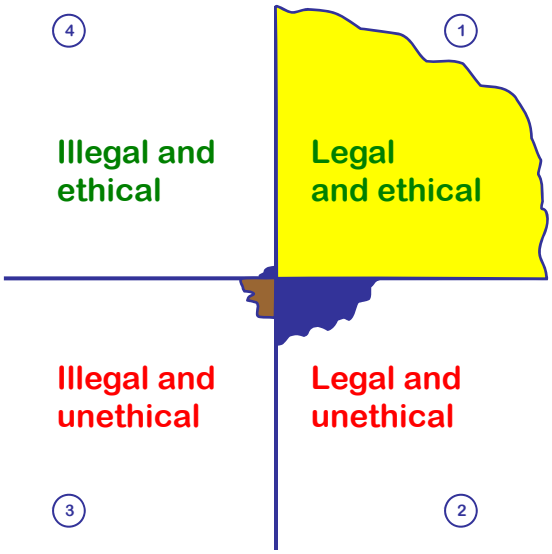
This legal and ethical domain helps resolve problematic situations



Source: Walesh 2012, Chapter 12



The four legal-ethical domain quadrants exhibit widely varying relative occurrence



Value of quadrants

Help us work through issues

Is the option we are considering right or left of the legal line?

Is it above or below the ethics line?

TOPICS

WHY STUDY ETHICS?

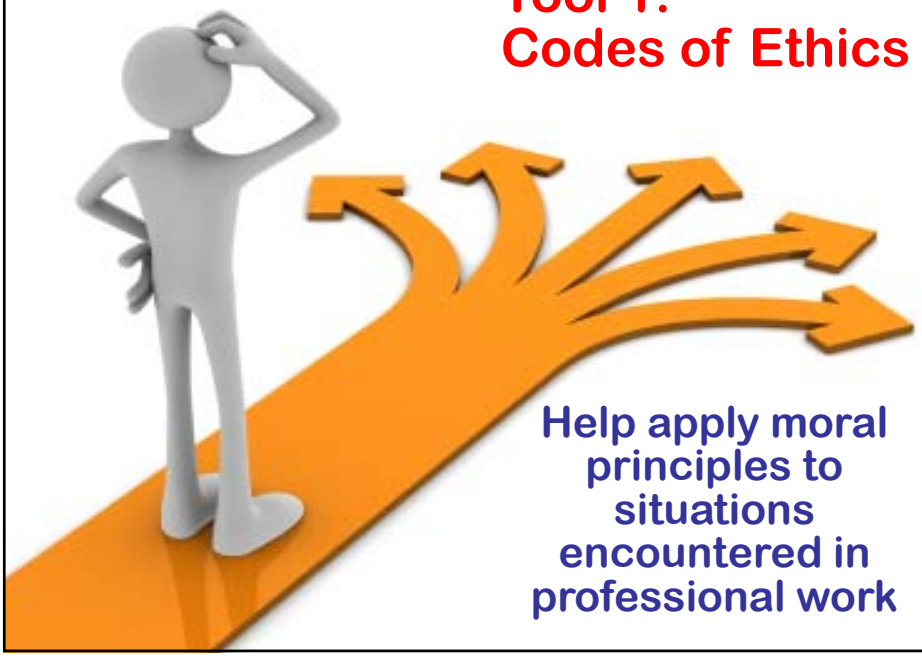
WHAT IS ETHICS?

HOW CAN WE MAKE ETHICAL DECISIONS?

CASE STUDIES

RECAP

Tool 1: Codes of Ethics



Help apply moral principles to situations encountered in professional work

Many sources of ethics codes

- Your employer
- Your professional societies
- Your clients—businesses and government entities
- Universities
- Other

Many sources of ethics codes

- *Your employer*
- Your professional societies
- Your clients—businesses and government entities
- Universities
- Other

Many sources of ethics codes

- Your employer
- *Your professional societies*
- Your clients—businesses and government entities
- Universities
- Other

Examples of professional societies having codes of ethics

American Council of Engineering Companies (ACEC)
American Institute of Architects (AIA)
American Institute of Chemical Engineers (AIChE)
American Institute of Planners (AIP)
American Society of Civil Engineers (ASCE)
American Society of Mechanical Engineers (ASME)
Association of Engineering Geologists (AEG)
Indiana Society of Professional Land Surveyors (ISPLS)
Institute of Electrical and Electronic Engineers (IEEE)
National Society of Professional Engineers (NSPE)
Project Management Institute (PMI)

American Society of Civil Engineers Code of Ethics

Fundamental Principles

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

a. using their knowledge and skill for the enhancement of human welfare and the environment;
b. being honest and impartial and serving with fidelity the public, their employers and clients;
c. striving to increase the competence and prestige of the engineering profession; and
d. supporting the professional and technical societies of their disciplines.

Fundamental Canons

1. Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.
2. Engineers shall perform services only in areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero-tolerance for bribery, fraud, and corruption.
7. Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision.

Guidelines to Practice Under the Fundamental Canons of Ethics

CANON 1.

Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties. Engineers shall recognize that the lives, safety, health and welfare of the general public are dependent upon engineering judgments, decisions and practices incorporated into structures, machines, products, processes and devices.

a. Engineers shall approve or seal only those design documents, reviewed or prepared by them, which are determined to be safe for public health and welfare in conformity with accepted engineering standards.
b. Engineers whose professional judgment is overruled under circumstances where the safety, health and welfare of the public are endangered, or the principles of sustainable development ignored, shall inform their clients or employers of the possible consequences.

c. Engineers who have knowledge or reason to believe that another person or firm may be in violation of any of the provisions of Canon 1 shall present such information to the proper authority in writing and shall cooperate with the proper authority in furnishing such further information or assistance as may be required.
d. Engineers should seek opportunities to be of constructive service in civic affairs and work for the advancement of the safety, health and well-being of their communities, and the protection of the environment through the practice of sustainable development.
e. Engineers should be committed to improving the environment by adherence to the principles of sustainable development so as to enhance the quality of life of the general public.

Who is bound by a professional society code?

Members of the society organization

Read the code before joining

Non-members: On a voluntary basis

Many sources of ethics codes

- Your employer
- Your professional societies
- *Your clients—businesses and government entities*
- Universities
- Other

Many sources of ethics codes

- Your employer
- Your professional societies
- Your clients—businesses and government entities
- *Universities*
- Other

Limitations of codes

- Can't anticipate all ethical dilemmas
- Don't prioritize competing demands
- Limited power

Source: Fleddermann1999 and Martin and Schinzinger 2005.

Codes evolve

The NSPE code, up to 1979, said that the engineer "shall not solicit or submit engineering proposals on the basis of competitive bidding."

Illegal

Ethical provision becomes an illegal act!

Source: Martin and Schinzinger 2005

Brooks Act of 1972

Prohibits federal agencies
from using competitive bidding
to select
engineering and similar firms
for professional services

Some states adopted mini-Brooks Acts

The intent of the failed anti-bidding code provision becomes a law!

Source: Clough et al 2005

Poll 2: Raising the ante

Tool 2:
Experienced colleagues

/ASCEEthicsWebinar

47

People outside of your organization

Members of your network
Family members
Former teachers
Religious leaders
Friends
Others

/ASCEEthicsWebinar

48

Ethics lessons from an electric utility manager

The manager imagined that board members were sitting around the conference table whenever he was there

Tool 3: A 9-step process

1. Determine the facts in the situation – obtain all of the unbiased facts possible.
2. Define the stakeholders – those with a vested interest in the outcome.
3. Assess the motivations of the stakeholders – using effective communication techniques and personality assessment.
4. Formulate alternative solutions – based on most complete information available, using basic ethical core values as a guide.

5. **Evaluate proposed alternatives** – short-list ethical solutions only; may be a potential choice between/among two or more totally ethical solutions.
6. **Seek additional assistance, as appropriate** – engineering codes of ethics, previous cases, peers, reliance on personal experience, prayer.
7. **Select the best course of action** – that which satisfies the highest core ethical values.
8. **Implement the selected solution** – take action as warranted.
9. **Monitor and assess the outcome** – note how to improve the next time.

Source: Texas Tech 2011

Poll 3: Windfall profit

Tool 4:
Application of Moral Imagination

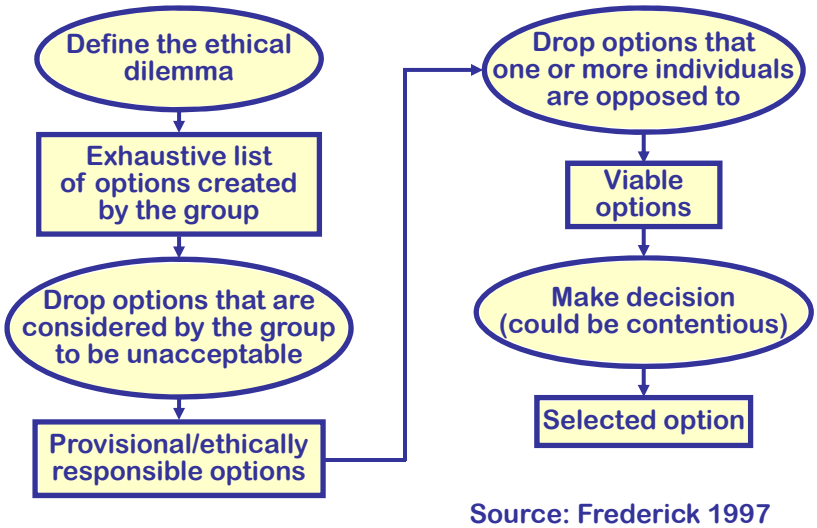
"Think through the implications of our actions, particularly as to how they will affect others"

Take the long view

Lee Atwater's story

Source: Telushkin 2000, Texas Tech 2011

Tool 5:
Systematic group process



Source: Frederick 1997

Tool 6:
Apps

Apps will expand and some will mimic or include features of the previous tools

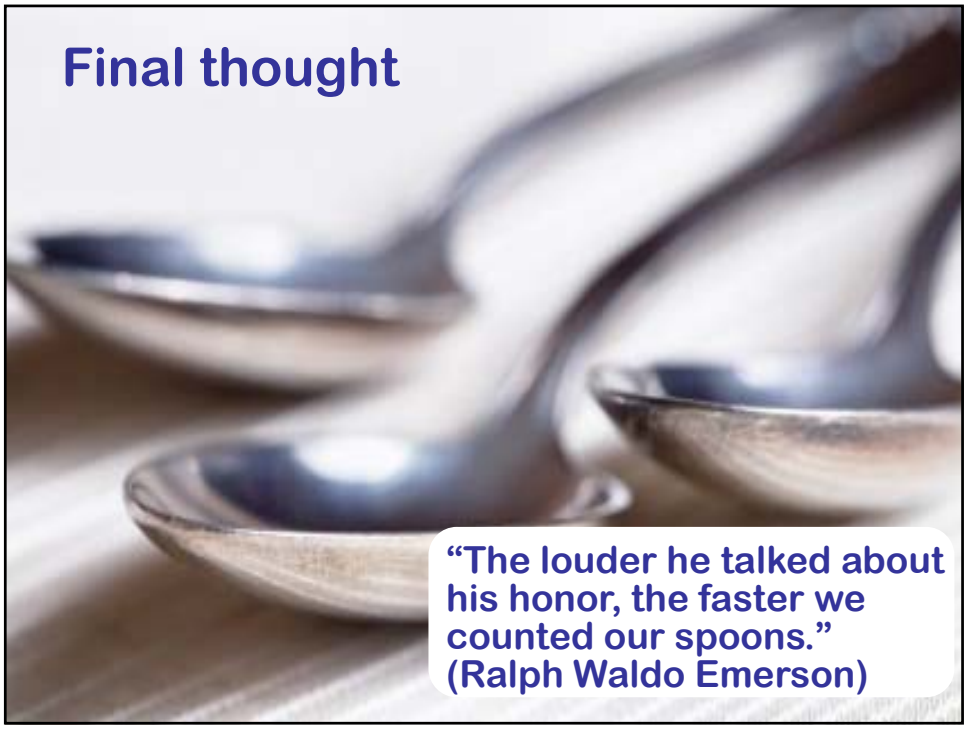
While there may be repetition, the apps feature or approach may appeal to some of us

Example Apps: "Making an Ethical Decision: A Practical Tool for Thinking About Tough Choices," Markkula Center for Applied Ethics, Santa Clara University, Santa Clara, CA http://www.scu.edu/ethics/ethical-decision). Source: PE 2014

How it works:

- You recognize an ethical issue and get the facts.
- Then for each option you can think of, you evaluate on the basis of these factors: Utility, Rights, Justice, Common Good, and Virtue (each is defined).
- Each option gets a numerical score that you/your group can use to compare options.

Final thought



"The louder he talked about his honor, the faster we counted our spoons."
(Ralph Waldo Emerson)

Poll 4: Possible conflict of interest

TOPICS

WHY STUDY ETHICS?

WHAT IS ETHICS?

HOW CAN WE MAKE ETHICAL DECISIONS?

CASE STUDIES

RECAP

CASE STUDY 1: DISCOVERING A MAJOR DESIGN ERROR AFTER CONSTRUCTION IS COMPLETE

In the 1970s, structural engineer William J. LeMessurier, and architect Hugh Stubbins, Jr., designed the 59 story, 910 foot Citicorp Center, which covered an entire city block in Manhattan.

LeMessurier was responsible for the structural design.

Sources: Fleddermann, C. B. 1999; Goldstein and Rubin, 1996; Morgenstern, 1995; Walesh, 2012; and Whitbeck, 1998.

Design Challenge:

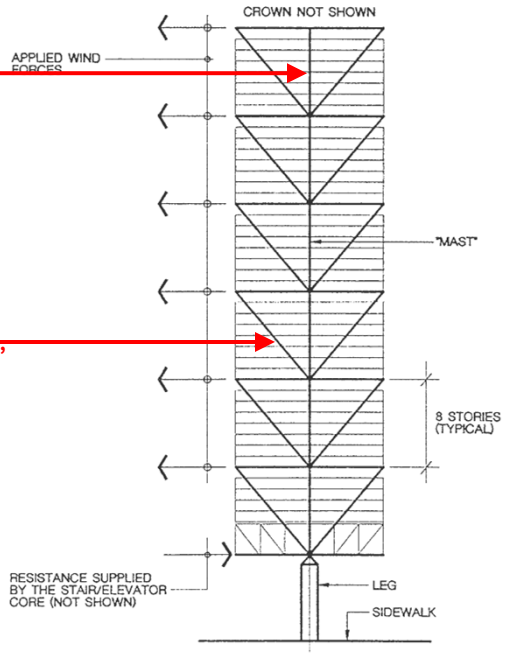
Because of the need to reserve space beneath one corner of the building for construction of a freestanding church (to replace an earlier church), the four supporting columns were placed in the middle of each façade or side of the building, rather than at the corners.

/ASCEEthicsWebinar

Four columns or legs supporting the Citicorp Center's frame were positioned at the middle of each side or facade of the building, rather than at the corners.

LeMessurier designed a unique system of V-shaped wind braces, arranged in a chevron pattern, mainly to withstand wind forces.

Construction of the Citicorp Center was completed in 1978.



Source: Goldstein and Rubin 1996

/ASCEEthicsWebinar

Oops!

As a result of a June 1978 question from an engineering student, who was writing a paper on the Citicorp Center, LeMessurier reviewed his original design. He discovered:

1. Quartering winds, in contrast with winds perpendicular to the building facades, increased strains on some of the chevrons by 40% over the design calculations.
2. The original design called for welded connections within the chevron wind bracing system. However, high-strength bolts were used during construction. Significance: the full potential strength of the connections would not be achieved.
3. Although the building had presumably been designed to withstand winds corresponding to roughly a 50-year recurrence interval storm, the combination of the design error and the construction change, reduced the protection to a 16-year storm.
4. The hurricane season was rapidly approaching.

What would you do?

William LeMessurier's Actions

1. Sought expert advice
2. Performed preliminary design of welded "band aids"
3. Considered reactions of stakeholders
4. Consulted with attorneys
5. Sought additional expert advice
6. Met with Citicorp's Chairman
7. Met with construction company representatives

8. Sought additional expert advice
9. Drafted emergency evacuation plan
10. Explained situation to City officials
11. Issued press release
12. Benefitted from city-wide press strike
13. Built plywood “houses” and welded at night
14. Experienced hurricane
15. Completed work in 10/78

Source: Whitbeck 1998

What happened to LeMessurier?

- Liability insurer paid $2 million
- Increased his reputation as a competent and forthright engineer
- Liability insurer lowered his premiums

Significance for us?

Source: Whitbeck 1998

CASE STUDY 2:
GM IGNITION SWITCH

ETHICS FAILURES MOSTLY BY ENGINEERS

This case study is based primarily on an exhaustive study (Pine 2014 and Valukas 2014):

- By Anton R. Valukas, former U.S. Attorney hired by GM CEO, completed 5/29/14)
- 350 interviews with 230 persons
- 41 million documents
- "Although everyone had responsibility to fix the problem, nobody took responsibility."

Disaster milestones:

- 2002: GM engineer Ray DeGiorgio approved a newly designed ignition switch that was below GM's minimum specifications—too little torque to turn key

- Mid to late 2000s: GM sold 1.6 million vehicles worldwide with faulty switches.

- 2004: GM begins to get informed about drivers accidentally turning of ignition—and airbags and steering—"brushed off" by engineers
- 2006: GM engineer Ray DeGiorgio quietly authorized new ignition design—He does not change part number thus failing to indicate that switches in earlier versions of cars were flawed—No recall notices issued
- Late 2000s: More warnings to GM and more "push back" by GM engineers and some lawyers (Spector 2015)

- February 2014: GM recalls 1.6 million vehicles, with the faulty switch, sold worldwide from mid-to late 2000s
- March 2014: 54 crashes and 13 deaths documented at this time
- This is just the beginning of the documented deaths/injuries

- June 2014: New GM GEO and engineer Mary Barra accepts Valukas report calling it “extremely thorough, brutally tough, and deeply troubling.” She:
  - Pledges to fix this and move on
  - Fires 15 employees, including engineer Ray DeGiorgio
  - Establishes a “global integrity unit”

- October 2014: 1371 claims have occurred
- January 31, 2015: Deadline for claims—3350 claims including 50 deaths (Stout 2015)
- May 2015: 107 deaths and 199 injuries now linked to the switch and 2.6 million vehicles recalled (Spector 2015)
- May 2015: GM faces criminal charges or a fine. Paid a $35,000,000 fine in 2014 for failing to recall (Matthews and Spector 2015)

- July 2015: CEO and engineer Mary Barra says (Roth 2015)
  - Need an insider—like her, 35 years—to fix the GM culture. Not an outsider
  - Personnel should think of ways to make all kinds of improvements and act on them
  - No more "GM nod"—someone says, at a meeting, that they will do something, but doesn't, and it's OK
  - Drive toward zero defects

Additional information:

1) Engineers were almost totally involved in the 11-year history of this disaster (Valukas 2014)
2) "No demonstrated sense of urgency, right to the very end" (Valukas 2014)
3) Mary Barra, GM GEO, BS in electrical engineering from Kettering University (formerly GMI), MBA Stanford, apparently not a PE (Wikipedia 2015)
4) Ray DeGiorgio, BS in mechanical engineering from Lawrence Technological University, apparently not a PE (Bunkley 2014)

This story will go on and on

Will we learn from it?

Some lessons:

- The industrial exemption invites disasters
- Unless we are careful, any of us can get trapped in a series of unethical actions—Each of us will be tested

What lesson did you learn?

In my view

Licensed practicing engineers are distinguished from unlicensed practicing engineers in three ways:

- First, they are more likely to be technically and otherwise current because continuing education is a condition of on-going licensure in most states
- Second, licensed engineers are required by licensing boards to be ethical or risk losing their licenses

- Third, licensed engineers strongly view themselves as members of a profession whose paramount responsibility is protection of public health, safety, and welfare rather than as being primarily technical employees answerable only to corporate expectations

An NSPE policy calls for phasing out of existing industrial exemptions in state licensing law

What do you think?
What are you doing about it?

Seeing sermons

"…just look at how the company leader behaves and you will know with 100 percent certainty how the employees will act and feel…"

All can lead

Source of quote: Berglas 1997

TOPICS

WHY STUDY ETHICS?

WHAT IS ETHICS?

HOW CAN WE MAKE ETHICAL DECISIONS?

CASE STUDIES

RECAP

As a result of this webinar, you should be able to answer these three questions:

- Why study ethics?
- What is ethics?
- How can we make ethical decisions?

ASCE | KNOWLEDGE & LEARNING

ASCE | KNOWLEDGE & LEARNING

Questions

Comments

Critiques

Tips

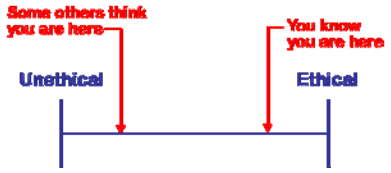
Suggestions

stuwalesh@comcast.net

/ASCEEthicsWebinar

RECAP

Where are we and/or where are we perceived to be on the ethics scale?



Bombarded daily

Why study ethics? Earn and maintain trust

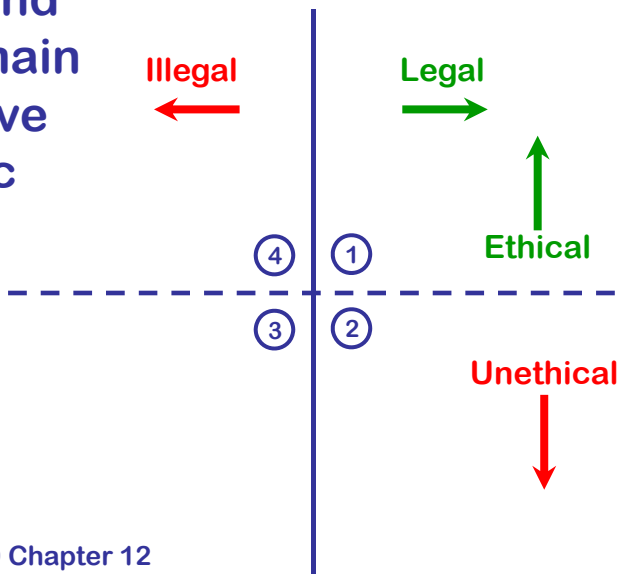
Is it this simple?

Competence + Ethical Behavior

= Sole Source Selection

Ethics: The process used to make value-laden decisions beyond the law in professional matters

This legal and ethical domain helps resolve problematic situations



Source: Walesh, 2000 Chapter 12

When faced with an ethical dilemma, we have tools to use

Tool 1: Codes of ethics

Tool 2: Experienced colleagues

Tool 3: A 9-step process

Tool 4: Application of moral imagination

Tool 5: Frederick's systematic group process

Tool 6: Apps

Citicorp Center case study

GM case study

Ethics dilemmas (in Appendix C)

Seeing sermons

APPENDIX A: RESOURCES

Note: Listed here are sources cited earlier plus additional materials for individual and group study. If you know of a useful resource that should be included, please let me know.

Some images in this handout are used through licensing agreements with iStockphoto.com.

Thank you,
Stu Walesh
stuwalesh@comcast.net

Books and Articles

Banik, G., L. Daugherty, K. Kleweno, N. C. Bazan-Arias, D. Berry, D. L. Richards, and J. A. Casazza. 2015. "Mandatory Continuing Education Requirements for Licensed Civil Engineers," *Journal of Professional Issues in Engineering Education and Practice – ASCE,* January.

Berglas, S. 1997. "Liar, Liar, Pants on Fire," *Inc.,* August, p. 33.

Bunkley, H. 2014. "How Ray DeGiorgio Threw GM Investigators Off Track for Years," *Automotive News,* June 9.

Clough, R. H., G. H. Sears, and S. K. Sears. 2005. *Construction Contracting – Seventh Edition,* John Wiley and Sons, New York, NY.

Eiser, A. 2013. "Why Qualifications Matter," *PE,* October, p. 35.

Fleddermann, C. B. 1999. *Engineering Ethics,* Prentice Hall, Upper Saddle River, NJ.

Frederick, R. E. 1997. "How to Teach Difficult Ethical Problems." *CBE News,* Volume 6, Number 1, pp. 3-5.

Fredrichs, E. 2012. "The Value of Trust," *CE NEWS,* November, p. 22 (The author's list of trust "ingredients" (quoted): 1) Listen carefully to your client, 2) Tell the truth, 3) Select your colleagues carefully, and 4) Go the extra mile).

Goldstein, S. H. and R. A. Rubin. 1996. "Engineering Ethics," *Civil Engineering,* American Society of Civil Engineers, October, pp. 41-44.

Herbert, W. 2011. "The Burden of Lying," *Scientific American Mind,* September/October 2011, pp. 66-67. ("…lying is more cognitively demanding than telling the truth…" which can lead to tactics for detecting lying. Examples are: asking a potential liar to tell their story in reverse, insisting that the individual maintain eye contact with the questioner, and requesting that the potential liar draw a picture.)

Hoke, T. 2012. "The Importance of Understanding Ethics," A Question of Ethics column, *Civil Engineering,* May 2012, pp. 40-41.

Holsapple, M. A. 2012. "What Ethical Role Models?," *Prism,* March 2012, p. 47.

Horsager, D. 2012. "Trust," Success Audio CD, *Success Magazine,* December. (David Horsager is author of *The Trust Edge: How Top Leaders Gain Faster Results, Deep Relationships, and a Stronger Bottom Line.* He stresses the "bottom line" importance of trust and describes eight trust pillars.)

Martin, M. W., and R. Schinzinger. 2005. *Ethics in Engineering – Fourth Edition,* McGraw Hill Higher Education, New York, NY.

Matthews, C. M., and M. Spector. 2015. "GM Likely to Face Criminal Charges," *Wall Street Journal,* May 26.

Morgenstern, J. 1995. "The Fifty-Nine-Story Crisis," *The New Yorker,* May 29, pp. 45-53.

Murphy, J.E. 2010. "A Compliance & Ethics Program on a Dollar a Day: How Small Companies Can Have Effective Programs," Society of Corporate Compliance and Ethics, Minneapolis, MN, www.corporatecompliance.org. August. (First, a comment about the title of this report. It is "catchy," but not credible, from the perspective of business or government personnel who face many and varied "pulls" on the use of their time or when viewed by a business person who must deal with the "bottom line." I say this because, while the document carefully estimates expenses, it does not account for labor! — a major cost. In fairness, on page 28 of the 29 page document, the author asks "where will you get the time?" A critical question! My second comment, which is much more positive, pertains to the content, more specifically, the many suggestions for developing a "compliance and ethics program." The suggestions are organized under the following 11 elements, each of which is listed here in summary form: 1) Risk assessment, 2) Having standards/procedures, 3) Managed by a senior person, 4) Care in hiring/promoting, 5) Systems for dealing with third parties, 6) Communication with employees, 7) Monitoring, 8) Discipline, 9) Consistent incentives and appraisals, 10) Quick response, and 11) Consistency with industry practice. Each of the preceding 11 elements is detailed in the document – lots of "meat" here. Closing Thought: Like any other important and worthwhile organizational effort, a compliance and ethics program requires commitment from the top and we know that those commitments cost orders of magnitude more than "a dollar a day.")

NSPE. 2012. "Unethical Conduct Down, Whistleblower Retaliation on the Rise, Survey Says," *PE,* NSPE, January/February, 2012, p. 10. (Access the National Business Survey at www.ethics.org).

Onsrud, H. J. 1987. "Approaches in Teaching Engineering Ethics," *Civil Engineering Education—ASCE Civil Engineering Division,* Fall, pp. 11-27.

PE. 2014. "So Many Codes of Ethics, Which One to Follow," *PE,* p. 10. (Note: Author not known).

PE. 2014. "Need to Make An Ethical Decision? There's an App for That," *PE,* July, p. 11.

Pine, A. 2014. "The Switch From Hell," *Prism,* ASEE, November, pp. 25-29.

Rabeler, R. C. 1991. "Maintaining Existing Clients," *Journal of Management in Engineering – ASCE,* January, pp. 21-32.

Randolph, E. 2012. "The Political Legacy of Baaad Boy Atwater," Editorial, *New York Times,* September 20.

Roth, D. 2015. "Mary Barra's Got a Plan for Fixing GM's Culture (and Only an Insider Can Pull it Off)," *In* (an e-publication of LinkedIn), July 6.

Schwartz, A.E. 2009. "Litmus Test for Ethical Dilemmas," *Structural Engineer,* June, p. 21. (Offers nine tests for use by an engineer confronted with an ethical dilemma.)

Sheridan, J. H. 1988. "Memos," *Industry Week,* July 4, p. 5.

Spector, M. 2015. "Former GM Engineer to Testify Over Defect," *Wall Street Journal,* May 28.

Stout, H. 2015. "Claims for GM Funds Pour In," *The New York Times,* January 31.

Swint, K. 2008. *Dark Genius: The Influential Career of Legendary Political Operative and Fox News Founder Roger Ailes,* Union Square Press, New York, NY.

Telushkin, J. 2000. "Ethics, One Day at a Time." *Imprimis,* March, pp. 1-7.

Texas Tech University. 2011. "Guidelines for Facilitating Solutions to Ethical Dilemmas in Professional Practice." Murdough Center for Engineering Professionalism, College of Engineering, (http://www.niee.org/case_of_the_month/ethics5.htm). May 13.

The Ken Blanchard Companies. 2011. e-newsletter, September 21.

Valukas, A. R. 2014. *Report to Board of Directors of General Motors Company Regarding Ignition Switch Recalls,* May.

Vesilind, P. A. 1988. "Rules, Ethics, and Morals in Engineering Education," *Engineering Education,* February, pp. 289-293.

Walesh, S. G. 2008. "Character and Our Imaginary Board of Directors," *Leadership and Management in Engineering – ASCE,* April 2008.

Walesh, S. G. 2012. *Engineering Your Future: The Professional Practice of Engineering,* Chapter 12, "Ethics: Dealing with Dilemmas," John Wiley and Sons, Hoboken, NJ, and ASCE Press, Reston, VA.

Whitbeck, C. 1998. *Ethics in Engineering Practice and Research,* Cambridge University Press Cambridge, UK.

Wikipedia. 2015. "Mary Barra," accessed January 24, 2015.

Websites

"Ethics" (http://www.nspe.org/Ethics/index.html). Note variety of items including, for free, Board of Ethical Review Cases. (1/15)

"Ethics Resource Center" (http://www.ethics.org/). "The Ethics Resource Center (ERC) is a non-profit research organization devoted to the advancement of high ethical standards and practices in public and private institutions." Offers many free reports. (1/15)

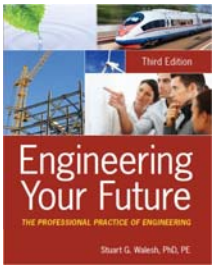
"Helping You Engineer Your Future" (http://www.HelpingYouEngineerYourFuture.com) offers ideas and information to help individuals and organizations improve their non-technical or "soft side" knowledge and skills. Provides links to online resources and summarizes news and events. (1/15)

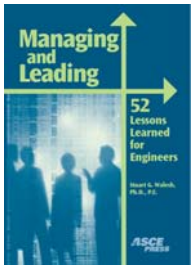
Stuart G. Walesh, PhD, PE provides management, engineering, education/training, and marketing services. He draws on more than 40 years of engineering, education, and management experience in the government and private sectors to help individuals and organizations engineer their futures. Walesh has functioned as a project manager, department head, discipline manager, marketer, professor, and dean of an engineering college.

Representative clients: include ASCE; Boston Society of Civil Engineers; BSA Life Structures; Castilla La Mancha University; CDM; Clark Dietz; Daimler Chrysler; DLZ; Earth Tech; Utility Board of Evansville, IN; Harris County (TX) Flood Control District; Hinshaw & Culbertson; Indiana Department of Natural Resources; Indiana Department of Transportation/Purdue University; J. F. New; Leggette, Brashears & Graham; Midwest Geosciences Group; MSA Professional Services; PBS&J; Town of Pendleton, IN; Pennoni Associates; Taylor Associates; City of Valparaiso, IN; University of New Haven; University of Wisconsin Engineering Professional Development; and Wright Water Engineers.

Walesh authored *Urban Surface Water Management* (Wiley, 1989), *Flying Solo: How to Start an Individual Practitioner Consulting Business* (Hannah Publishing, 2000), *Managing and Leading: 52 Lessons Learned for Engineers* (ASCE, 2004), and *Managing and Leading: 44 Lessons Learned for Pharmacists* (ASHP, 2008, co-authored with Paul Bush, Pharm.D), and *Engineering Your Future: The Professional*

Practice of Engineering - Third Edition (Wiley and ASCE Press, 2012). He is writing *Creativity and Innovation for* Engineers under contract with Pearson Education. Walesh is author or co-author of over 200 publications and presentations and has facilitated or presented over 200 workshops, seminars, webinars, and meetings throughout the U.S.





He is chair of NSPE's Engineering Body of Knowledge Subcommittee and has chaired several national committees.

In 1995, he received the Public Service Award from the Consulting Engineers of Indiana; in 1998, the Distinguished Service Citation from the College of Engineering at the University of Wisconsin; in 2003, the Excellence in Civil Engineering Education Leadership Award presented by ASCE; in 2004, he

was elected an Honorary Member of ASCE; in 2005, he was elected a Diplomate of the American Academy of Water Resource Engineers; in 2007, he was named Engineer of the Year by the Indiana Society of Professional Engineers and received a Distinguished Service Award from the National Society of Professional Engineers; in 2008, he received the William H. Wisely American Civil Engineer Award from ASCE for leadership in promoting engineering as a profession; in 2009, he received the George K. Wadlin Distinguished Service Award from the Civil Engineering Division of the American Society for Engineering Education; in 2010, he was named a Fellow Member of the National Society of Professional Engineers; in 2013, he received an Alumni Achievement Award from Valparaiso University; and in 2014, he received the Thomas A. Morris Leadership Award from the Indiana Society of Professional Engineers.

Cell: 219-242-1704
Email: stuwalesh@comcast.net
Website: www.HelpingYouEngineerYourFuture.com

APPENDIX C: ETHICS DILEMMAS

1. RAISING THE ANTE

Assume you are an engineer employed by an engineering firm. Your firm designed a bridge for a city. Your contract includes monitoring the bridge project which is being built for the city by a private contractor.

Note: For many interesting ethics case studies refer to "A Question of Ethics," a column in each monthly issue of ASCE's *Civil Engineering,* and "On Ethics," a column in NSPE's *PE,* which is published every two months.

Because of your education and field engineering experience, you are able to suggest techniques and procedures that could save the contractor both time and money, but that is not your responsibility. The work is to be done strictly according to the plans and specifications.

It is immediately after quitting time on a hot summer Friday afternoon. The President of the construction firm comes to the site and offers a cold soft drink to each of his employees.

1. The President offers you a soft drink. May you accept it? Why?
2. What if the President hands each worker and you a pen with his company name on it? Would you accept? Why?
3. Assume the President hands every worker and you a six pack of soft drinks. Is it ethical for you to accept a six pack? Why?
4. What if the President hands every worker a can of beer and offers one to you? Can you ethically accept? Why?

5. What if the President offers every worker a six pack of beer? Would you accept? Why?

6. How about a case of booze? Would you accept? Why?

7. What if the President offers a hat and jacket with the construction company name and logo on it? Would you accept? Why?

Source: Walesh, 2000

2. CODE OF ETHICS FOR NON-MEMBER OF A PROFESSIONAL SOCIETY

Assume you are an engineer who works for an engineering organization and does not belong to any professional society.

1. Are you still bound by the code(s) of the society that serves your profession? For example, are you bound by one or more of the engineering society codes?

2. If not, what is your code? How do you know how to make ethical decisions within the consulting arena?

3. Without an operable code relevant to your profession/specialty, are you jeopardizing co-workers and your company?

4. Should all engineering organization personnel be required to be a member of at least one appropriate professional society so that at least one professional code is operable?

3. CHARGING TIME AND EXPENSES TO OTHER PROJECTS

1. Project A, a lump sum contract, is going very well. It will "come in" way under budget and show a very large profit.
2. Project B, being carried out in the same office, is in deep budget trouble. The budget is "shot" and much work remains to be done.
3. The managers of the two projects discuss the situation. The Project A PM agrees to let some Project B time and expense be charged to Project A. A profit will still be shown by Project A. This approach will help Project B and not have any impact on the Project A client.

4. What quadrant does this situation lie in?

5. Is this arrangement ethical? Is it prudent?

6. Is it prudent?

4. WINDFALL PROFIT

1. Your firm signs a lump sum bridge design contract with a long-standing municipal client. The project was carefully scoped and the budget is tight but achievable.

2. While attending a corporate meeting, the manager of the bridge design project learns that one of the firm's other offices just completed the design of a bridge that, by coincidence, is almost identical.

3. By obtaining the files from the recent project and getting help from personnel who worked on the earlier bridge project, the PM on the new bridge project will be able to bring in the project so that it has 40% profit, that is, 40% of the lump sum fee will be profit. The planned profit was 15%.

4. What quadrant does this situation lie in?

5. Is this one of those serendipitous events that occasionally happens in the consulting business and, therefore, the firm should be happy it happened? After all, the large profit will offset losses on other projects.

6. Or is there an ethical issue? If so, what is it?

7. Bottom line: What is the ethical action to be taken by the firm?

5. POSSIBLE CONFLICT OF INTEREST

1. Nancy Jones, P.E., a principal of your firm, serves as chairman of Floodville's storm drainage board.

2. The board was established by the Floodville city council to advise on the city's general engineering needs for drainage and the related facilities.

3. The board periodically reviews the facilities in light of economic and environmental considerations and submits recommendations for improvements to the city council.

4. When the council determines that changes or additions to the facilities need to be designed, it directs the city's engineering staff to get statements of interest and qualifications from engineering firms.

6. The responses are provided to the storm drainage board for review and returned with recommendations to the city council, which selects a firm to negotiate a contract.

6. Up to now, Jones has advised the city council and its engineering staff that her firm should not be considered because she is on the advisory board.

7. Even so, the city engineering staff now requests Jones' firm, along with other firms, to submit its qualifications for a pending project.

8. Jones discusses the situation openly with the members of the city council, the city attorney, and the city manager, each of whom says it would be proper for Jones' consulting firm to be considered and, if selected, to accept the project, provided Jones does not participate in the considerations and recommendations of the advisory board.

9. What quadrant does this situation lie in?

10. What do you think? Is submittal of qualifications by Jones' firm ethical if Jones removes herself from the board's evaluation process?

Source: Adapted from NSPE Board of Ethical Review

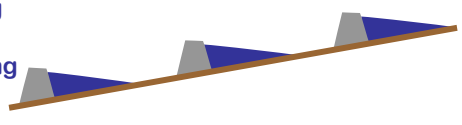
6. CRITICIZING THE WORK OF OTHERS

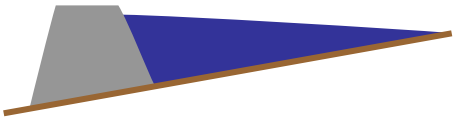
1. In a mid-western state legislature, various bills involving water supply, flood control, and production of electric power are awaiting action.

2. The question of how to achieve the bills' goals most efficiently and economically has been debated within the legislature and in public forums for several years.

3. A state legislative committee on public works calls a hearing to receive comments and recommendations on the various proposals.

4. Terry Techna, P.E., representing the state power commission, testifies that from an engineering standpoint, her team's studies point to a series of low dams as the most efficient solution.





5. A. U. Tility, P.E., representing a private power company, testifies that according to his engineering analysis, a single high dam would produce the same results both faster and for less money.

6. Both engineering witnesses submit voluminous engineering data in support of their positions and do not hesitate to criticize the other's analysis and findings.

7. What do you think? Is it ethical for Techna and Tility to criticize each other's analysis and finding?

8. Wasn't their public disagreement in conflict with the ethical responsibility to enhance their profession(s)?

9. What quadrant does this fall in?

Source: NSPE Board of Ethical Review

7. EXPERT WITNESS COMPENSATION

1. When damages arise from engineering failures, X. Burt Eye, P.E., is often asked to serve as technical advisor in the resulting lawsuit. He provides the contracting attorney expert analysis and consultation on the technical reasons for the alleged failure. Eye may also be called on to testify at the trial as an expert witness in support of his findings.
2. In the past, Eye has provided those services on a per diem basis.
3. In one case, however, Eye is asked by the plaintiff to accept as payment a percentage of the eventual damage award—in the event the plaintiff wins the case. If the defendant comes out on top, however, Eye will not collect a dime. Eye agrees to this proposal.
4. What do you think? Was it ethical for Eye to provide his services for a percentage of a possible court award?
5. What quadrant does this fall in?

Source: NSPE Board of Ethical Review

8. TAKING PAYMENT IN STOCK

1. Horace "Spec" U. Lator, P.E., is retained by a newly incorporated marine terminal company to conduct a feasibility study on the engineering aspects and economic prospects of building some commercial wharves and stevedore and warehouse facilities.
2. A fee is agreed upon, and on receiving the study, company officials tell Lator that they plan to proceed with the project and want him to develop the detailed plans and other engineering aspects of the work.
3. The company president informs Lator that the company has limited cash assets and asks whether he would be willing to take his fee in company stock for both the feasibility study and the detailed engineering.
4. Lator accepts the proposal and performs the services for the company.
5. What quadrant does this lie in?
6. Is it ethical for Lator to accept company stock as payment for his professional consulting services?

Sources: Source: *ET,* 5/88, NSPE Board of Ethical Review

9. RECOGNIZING WORK PRODUCTS OF OTHERS

1. Your firm is retained to prepare a long range wastewater collection and treatment system plan for a rapidly growing community.
2. Early in the project, the City Engineer provides your project manager with dozens of documents such as reports, memoranda, plans (drawings), aerial photographs, and maps. Some of the documents were prepared by local, regional and state government entities and others by consultants.
3. As the project report is being written, a disagreement develops within the project team. It involves the documents provided by the City Engineer. Ideas and information from most of them are being used in the report.
4. One group, the "cut to the chase" members of the project team, argues that there is no need to cite individual documents. A simple acknowledgement statement such as "Documents provided by the City Engineer were used in preparation of this report" would suffice.
5. Others, the "academics," argue that each source should be cited in the text and a list of cited references should appear at the end of the report.
6. What do you think?
7. What quadrant does this lie in?

10. USE OF CD-ROM FOR HIGHWAY DESIGN

1. Engineer A, a chemical engineer with no facilities design and construction experience, receives a solicitation in the mail with the following information:

> *Engineers today cannot afford to pass up a single job that comes by--including construction projects that may be new or unfamiliar.*
>
> *Now--thanks to a revolutionary new CD-ROM--specifying, designing and costing out any construction project is as easy as pointing and clicking your mouse--no matter your design experience. For instance, never designed a highway before? No problem. Just point to the "Highways" window and click.*
>
> *Simply sign and return this letter today and you'll be among the first engineers to see how this full-featured interactive library of standard design can help you work faster than ever and increase your firm's profits.*

2. Engineer A orders the CD-ROM and begins to offer facilities design and construction services.

3. What quadrant does this lie in?

4. Was it ethical for Engineer A to offer facilities design and construction services under the facts presented?

Source: NSPE Case No. 98-3

APPENDIX D: DOES ETHICAL BEHAVIOR "PAY?"

Investor's Business Daily's observation, regarding their 10 secrets to success:

Investor's Business Daily has spent years analyzing leaders and successful people in all walks of life. Most have 10 traits that, when combined, can turn dreams into reality.

So what are the 10 secrets or traits?

1. **HOW YOU THINK IS EVERYTHING: Always be positive. Think success, not failure. Beware of a negative environment.**

2. **DECIDE UPON YOUR TRUE DREAMS AND GOALS: Write down your specific goals and develop a plan to reach them.**

3. **TAKE ACTION: Goals are nothing without action. Don't be afraid to get started now. Just do it.**

4. **NEVER STOP LEARNING: Go back to school or read books. Get training and acquire skills.**

5. **BE PERSISTENT AND WORK HARD: Success is a marathon, not a sprint. Never give up.**

6. **LEARN TO ANALYZE DETAILS: Get all the facts, all the input. Learn from your mistakes.**

7. **FOCUS YOUR TIME AND MONEY: Don't let other people or things distract you.**

8. **DON'T BE AFRAID TO INNOVATE; BE DIFFERENT: Following the herd is a sure way to mediocrity.**

9. **DEAL AND COMMUNICATE WITH PEOPLE EFFECTIVELY: No person is an island. Learn to understand and motivate others.**

10. **BE HONEST AND DEPENDABLE; TAKE RESPONSIBILITY: Otherwise, Numbers 1-9 won't matter.**

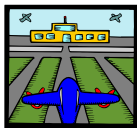
System Corporation studied 3,000 industrial sales representatives (Sheridan 1988). Included were customers' **ratings of the sales representatives.**

Conclusion: **The "ability to establish trust" was more important than likeability.**

Think of your purchases

Before buying one of these, do you need to know that the craftsperson is ethical?

How about one of these?



Failure of one-of-a-kind structures, facilities, and systems designed by major consulting firms can have catastrophic effects

Walkway collapse at the Hyatt Regency Hotel in Kansas City, MO, 1981: 114 people killed and 200 injured.

- This devastating failure was caused by errors.
- Are we ethically bound to be competent?

Source: http://www.eos.uoguelph.ca/webfiles/james/FamousEngrgDisasters.htm (Access date: 8/6/99).

The Five "A"s of Rebuilding Trust

Acknowledge that trust has been broken

Admit your role in causing the breach in trust

Apologize for what happened

Assess where the breakdown in trust happened

Amend the situation by taking corrective action

Source: The Ken Blanchard Companies, 2011

APPENDIX F: WHAT OTHERS SAY ABOUT TRUST

**"I'm not upset that you lied to me;
I'm upset that from now on I can't believe you."
(Friedrich Nietzsche, German philosopher)**

**"If you once forfeit the confidence of fellow citizens,
you can never regain their respect and esteem.
It is true that you may fool all of the people some of the time;
you can even fool some of the people all of the time;
but you can't fool all of the people all of the time."
(Abraham Lincoln, 16th U.S. President)**

How to Obtain Webinar Certificate

Visit www.asce.org/Webinars#policies and follow the brief instructions listed. Group attendees must use the "Order Number" – obtained from your Webinar Purchaser or Coordinator – to obtain a certificate.