

Ethics for Leading Engineering Projects

By

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1. Introduction

Maintaining a positive reputation can be as valuable as the bottom line. Ethical conduct is essential for maintaining a positive reputation, at the personal level, team level, and organizational level. Project leaders play a key role in representing the team and the organization. Thus, leaders are held to high ethical standards.

Engineering projects, by their very nature, involve high risks, significant funding, and long timelines, creating ample opportunity for ethical challenges that can damage an organization's reputation and lead to legal problems. Ethical conduct is absolutely necessary for project and organizational success. Example ethical dilemmas include information manipulation to avoid looking bad and changing the project scope without required authorization.

This course reviews professional ethics on a broad scale and then focuses on ethics specifically for leading engineering projects. Professional standards covered in this course include:

- *Code of Ethics for Engineers* by National Society of Professional Engineers (NSPE)
- *Code of Ethics and Professional Conduct* by the Project Management Institute (PMI)
- *Code of Ethics* by the Center for Project Innovation (CPI)

This course examines core ethical values on a practical level when faced with real-world engineering project scenarios. Common ethical dilemmas are presented with reflections on choices and potential consequences.

This course recommends the adoption of an ethical framework to provide transparency, foster stakeholder trust, and achieve lasting project success. An example framework is the five-step Ethical Decision-Making Framework by PMI. It helps in decision-making by evaluating choices in a methodical manner according to ethical principles.



Figure 1: Words related to ethics.

Source: commons.wikimedia.org/wiki/File:Morals-and-ethics.jpg, Teodoraturovic, CC-BY-SA-4.0

2. Professional Ethics

Ethics is concerned with moral principles and appropriate conduct. For example, doing the right thing, considering others before oneself, and behaving in accordance with agreed principles.

Professional ethics are standards of behavior for working professionals. For example, the Hippocratic Oath has been taken by physicians since the fourth century BCE. The oath established several principles of medical ethics still in use around the world, including medical confidentiality and non-maleficence (not harming a patient). Another historic example is the Teacher's Oath, which includes a commitment to respecting students, improving teaching skills, and teaching for the good of the students.

Professionals, including project managers, are subject to behavior standards set and enforced by:

1. Federal, state, or local regulations (laws and rules)
2. Employers (corporate policy, office standards, employment agreements, etc.)
3. Professional organizations (PMI, NSPE, etc.)

As an example for #1 and #2, U.S. federal government employees (including engineers and project managers working for the government) are subject to the ethical standards in Code of Federal Regulations:

> *5 CFR 2635.101 Basic obligation of public service.*
>
> *(a) Public service is a public trust. Each employee has a responsibility to the United States Government and its citizens to place loyalty to the Constitution, laws, and ethical principles above private gain. To ensure that every citizen can have complete confidence in the integrity of the Federal Government, each employee must respect and adhere to the principles of ethical conduct set forth in this section, as well as the implementing standards contained in this part and in supplemental agency regulations.*

As an example for #2, Apple promotes conducting business ethically and has the following ethics statement on their website:



Ethics and Compliance

Apple conducts business ethically, honestly, and in full compliance with the law. We believe that how we conduct ourselves is as critical to Apple's success as making the best products in the world. Our Compliance and Business Conduct policies are foundational to how we do business and how we put our values into practice every day.

"We do the right thing, even when it's not easy."

Tim Cook

As another example for #2, Costco Wholesale Corporation promotes ethical capitalism and has the following Code of Ethics statement:

What is Costco's Mission Statement and Code of Ethics?

Here at Costco, we have a very straightforward, but important mission: to continually provide our members with quality goods and services at the lowest possible prices.

In order to achieve our mission, we will conduct our business with the following Code of Ethics in mind:

- Obey the law.
- Take care of our members.
- Take care of our employees.
- Respect our suppliers.

If we do these four things throughout our organization, then we will achieve our ultimate goal, which is to reward our shareholders.

For #3, this course focuses on (3) widely adopted standard from professional organizations:

- *NSPE Code of Ethics for Engineers*
- *PMI Code of Ethics and Professional Conduct*
- *CPI Code of Ethics*

3. Steps for Applying Ethics

Applying ethical principles when leading engineering projects brings about more long-term success for both the projects and the organization. Unethical and immoral behavior may provide some short-term gains but introduces several risks that eventually lead to project failures and damaged reputations. So, the question then becomes:

How can I apply ethical principles when managing engineering projects?

This course suggests the following steps:

1. Review applicable policies on code of conduct
2. Review applicable procedures on project management
3. Review professional ethics standards
4. Apply ethics with a decision-making framework

The following are details on each step:

Step 1: Review applicable policies on code of conduct

As laid out in the previous chapter, organizations typically have policies on behavior that apply to all employees. Although they go by different names, examples include:

- Code of Conduct
- Code of Business Conduct
- Rules of Conduct
- Code of Ethics
- Business Ethics and Compliance
- Standards of Conduct
- Ethical Code
- Standards of Behavior

Many companies also have a guidance statement with high-level ethical principles, such as the Apple and Costco statements in the previous section. Often these statements are referred to as follows:

- Company Values
- Our Guiding Principles
- Community Standards
- Corporate Credo
- Management Philosophy Statement
- The Way We Work
- Our Commitment

A PM should periodically review any behavioral policies and consider how they apply to current projects. These policies are usually general and apply to every position in

the organization. However, there are usually several areas that commonly apply to project management:

- Honesty and transparency rules can impact how project status and financials are reported.
- Accountability rules may indicate the level of responsibility a project manager must take on for activities by others when working on their projects and for performance metrics.
- Anti-discrimination and anti-harassment policies, as they relate to team culture, fairness, and respect to all team members.
- Conflict of interest mitigation, such as declaring any potential conflicts of interest, such as personal relationships, side business activities, significant gifts to or from vendors and clients, and impartiality in procurement.
- Expense restrictions such as alcohol, entertainment, and per diem.
- Resource management rules that require a project manager to be a responsible steward of company resources (staff, money, and materials) and ensuring these are not misused for personal gain.

Step 2: Review applicable procedures on project management

Organizations often have specific policies and procedures for the management of projects. Sometimes a Project Management Office (PMO) releases standard procedures, templates, and offers training to project managers. And each department, division, or program may have its own specific procedures. Some of the project management procedures are related to ethics. It's important to distinguish which procedures are always required, optional, or only required for specific project types or dollar values.

Step 3: Review professional ethics standards

Most professional organizations have a code of ethics. For engineering, the most widely adopted is the "Code of Ethics for Engineers" by the National Society of Professional Engineers (NSPE).

For project management, the most widely adopted standard from a professional organization is the *PMI Code of Ethics and Professional Conduct* by the Project Management Institute (PMI). Another code is the *Code of Ethics* by the Center for Project Innovation (CPI).

Step 4: Apply ethics with a decision-making framework

Ultimately, leaders need to apply high-level ethical standards to actual project scenarios that involve ethical dilemmas. Ethical dilemmas include two or more conflicting values without a clearly best path forward. These dilemmas are beyond meeting the minimum requirements of laws. They involve positives and negatives with each option and questionable ethical actions.

Consistently making good choices can be challenging as project issues can be complex with a balance of potential scope changes, strict quality requirements, tight timelines, and cost limits. A way to apply vague ethical principles is through the use a decision-making framework.

A decision-making framework is a structured approach for evaluating options and making logical choices. It involves analyzing a situation, gathering information, assessing alternatives, comparing advantages and disadvantages to each alternative, and selecting the best course of action.

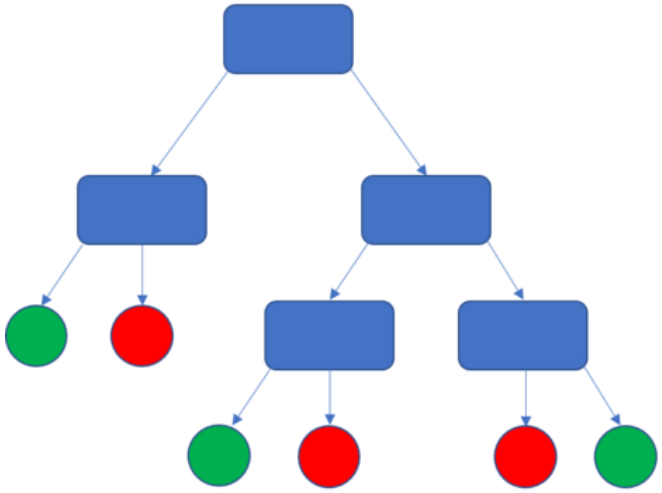


Figure 2: Decision tree with red options eliminated due to ethics issues.

Source: commons.wikimedia.org/wiki/File:Decision_Tree_vs._Random_Forest.png, Jeremybeauchamp, CC-BY-SA-4.0

4. NSPE Code of Ethics for Engineers

The “Code of Ethics for Engineers” by the National Society of Professional Engineers (NSPE) is the most widely accepted document for engineering ethics in the United States. The following are the main statements of the code. The full document with all subsections can be found on the website listed in the references section at the end of this course.



I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act for each employer or client as faithful agents or trustees.
5. Engineers shall avoid deceptive acts.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.
2. Engineers shall at all times strive to serve the public interest.
3. Engineers shall avoid all conduct or practice that deceives the public.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.
5. Engineers shall not be influenced in their professional duties by conflicting interests.
6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.
7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.
9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

5. PMI Code of Ethics and Professional Conduct

The *PMI Code of Ethics and Professional Conduct (*PMI Code of Ethics*)* is the most popular ethics standard for projects (engineering and non-engineering). The purpose of the PMI Code of Ethics is to help project professions become better practitioners. It promotes applying ethical principles in everyday project situations.

The PMI Code of Ethics includes both *aspirational* standards and *mandatory* standards. Aspirational standards are encouraged to be upheld and are difficult to measure. Mandatory standards are firm requirements and sometimes limit practitioner behavior.

The code is organized by four core ethical values: Responsibility, Respect, Fairness, and Honesty. The four values were chosen based on a survey which asked members of the project management community to identify the ethical values that formed the basis of their decision-making and guided their actions. Responsibility, Respect, Fairness, and Honesty were the top four values.

The PMI Code of Ethics is summarized as follows.

4.1. Responsibility

Responsibility involves gaining a feeling of culpability and ownership for actions taken.

Aspirational standards include:

- Make decisions based on public best interest, health, safety, and environment
- Responsible management of technology
- Only accepting assignments when qualified
- Fulfilling commitments
- Correct and manage errors and omissions
- Protect confidential information

Mandatory standards include:

- Uphold laws and rules
- Report unethical and illegal conduct
- File complaints only when substantiated
- Do not retaliate

4.2. Respect

Respect is showing regard for people and resources.

Aspirational standards include:

- Be inclusive
- Learn the norms and customs of others
- Active listening and understanding others
- Value diverse viewpoints
- Help people feel valued
- Avoid undermining the reputation of others
- Behave in a professional manner

Mandatory standards include:

- Negotiate in good faith
- Don't benefit at the expense of others
- Don't act in an abusive manner
- Respect the rights of others

4.3. Fairness

Fairness is acting impartially and objectively.

Aspirational standards include:

- Transparency in decision-making
- Strive for impartially and objectively
- Provide equal access to authorized information
- Provide equal opportunities

Mandatory standards include:

- Disclose potential conflicts of interest
- Avoid favoritism, nepotism, and bribery
- Treat people fairly
- Equally apply rules of the organization

4.4. Honesty

Honesty is being truthful in communication and behavior.

Aspirational standards include:

- Understand the facts
- Be honest in communication and behavior
- Provide facts in a timely manner
- Make commitments in good faith
- Create a safe and honest environment

Mandatory standards include:

- Do not deceive others
- Do not engage in dishonest behavior for personal gain

5. CPI Code of Ethics

The *Code of Ethics* by the Center for Project Innovation (CPI) is meant to guide alumni and project professionals in the best practices of ethical decision making in project management. This applies to engineering and non-engineering projects.

The Code presents the following ten principles:

1. Professional Integrity:
    - Ethical conduct including honesty, fairness, respect, responsibility, integrity, trust, and sound judgment
    - Not compromising ethical principles for short-term gains

2. Conflicts of Interest:
    - Ensure personal interests do not conflict with project interests
    - Avoid using stakeholder contacts to advance private interests at the expense of clients
    - Fully disclose any potential conflicts to clients

3. Ethical Remuneration:
    - Do not give bribes, kickbacks, or similar
    - Avoid gifts, gratuities, fees, bonuses, or entertainment for influence

4. Data Privacy:
    - Safeguard proprietary, confidential, and sensitive information
    - Do not share project information for personal gain

5. Fair Competition:
    - Do not gain information on competitors by illegitimate means
    - Avoid overly negative critiques of competitors

6. Compliance and Respect:
    - Comply with all laws and client policies
    - Disclose any unethical behavior
    - Communicate in good faith
    - Avoid offending, insulting, humiliating, or intimidating others

7. Honest Representation:
    - Avoid deceptive behavior, half-truths, material omissions, and misleading statements

- Project estimates are to be based on accurate and transparent forecasting

8. Equality and Fairness:
    - Do not engage in favoritism or nepotism
    - Do not discriminate based on protected characteristics

9. Keeping Promises:
    - Strive to fulfill commitments
    - Take ownership of mistakes
    - Make prompt corrections
    - Promptly communicate mistakes to appropriate stakeholders
    - Take remedial actions for mistakes

10. Accountability:
    - Foster a culture of ethical conduct and compliance with the law
    - Support others in their efforts to comply with this Code
    - Encourage the correction of unethical behavior

6. PMI Ethical Decision-Making Framework

The PMI Ethical Decision-Making Framework (PMI EDMF) was established in 2012 by the PMI Ethics Member Advisory Group to serve as a guide for project professionals when facing ethical dilemmas.

An ethical dilemma is a situation where a leader must choose between two or more moral principles, and no matter which option is chosen, there will be a negative impact, or an ethical principle will be compromised.

The PMI EDMF encourages critical thinking by asking a series of questions. After reflection on the answers to the questions, a decision and action is to be made. It is encouraged to challenge oneself with additional questions for unique situations.

The following is a summary of the PMI EDMF steps:

1. Assessment
   Gather facts and assess whether there are relevant laws, organization policies, contract terms, or clear ethical standards. If there are questionable legal issues, seek legal advice.

2. Alternatives
   Develop solutions and list the advantages and disadvantages to each option.

3. Analysis
   Select the apparent most beneficial option, called the candidate decision, and analyze the validity. Consider the impact to staff, client, employment organization, other stakeholders, public, and the environment. Also, confirm you are free from influence to made a decision.

4. Application
   Is the candidate decision consistent with PMI Code of Ethics values of Responsibility, Respect, Fairness, and Honesty? If not, consider another beneficial option.

5. Action
   Confirm you are willing to accept responsibility for the decision. If so, proceed with taking action.

7. Decision-Making Example Scenario

Project manager Kristy is leading a production automation project with a hard deadline for system startup that is fast approaching. During desktop testing, the controls engineer discovered a critical security risk of data vulnerability if the new controls system were connected and started. Fixing the vulnerability would delay the project by three weeks. The department director pressures Kristy to proceed with startup on time and "patch it later," arguing the risk is low and the client agreement emphasizes timeliness. The client, however, expects a secure and transparent product. A progress schedule is due soon, so a decision needs to be made.

To assess the ethical dilemma, Kristy applies the PMI EDMF steps as follows:

<u>Step 1: Assessment</u>

- Facts:
  - The project has a hard deadline.
  - A critical security bug exists.
  - The client demands transparency and a secure product.
  - The VP wants to proceed and patch later.

- Stakeholders:
  - Owner/Client (data vulnerability, product quality, transparency)
  - VP (timeline, reputation)
  - Project team (liability, morale)
  - Kristy (professional ethics, job security)

- Questions:
  - Does starting with the vulnerability abide by Federal data protection regulations?
    Appears to comply since a single private system.

  - Does startup with the vulnerability abide by Owner data security policies?
    Appears not to comply.

  - Does it align with the PMI Code of Ethics (Responsibility, Respect, Fairness, Honesty)?
    Hiding the vulnerability would violate honesty. Risking data violates responsibility.

  - Does it meet client's expectations?
    Client position on security vulnerability unknown.
    Client expects transparency.

Client expects meeting deadline.

Step 2: Alternatives

Kristy makes the following table to compare alternatives.

Table A: Alternatives Comparison			
No.	Alternative Description	Pros	Cons
A	Startup the product on time and immediately start work on the patch	Meets deadline; Complies with Director's request	Risks user data exposure; Violates honesty to the client; Potential reputational damage
B	Delay the startup by three weeks to fix the bug before release	Ensures data safety; Adheres to the PMI Code of Ethics; transparency; Long-term client trust	Miss the project deadline; VP displeasure; Potential financial penalties from client
C	Have a transparent conversation with the client about the delay	Diffuses personal responsibility; Focuses on ethical compliance and risk mitigation	Lack of decision may further delay work; Conveys indecisive leadership

Step 3: Analysis

Kristy identifies Alternative C as the most ethically sound path and candidate decision. She tests its validity using critical thinking questions:

- Will the decision have a positive impact looking back a year from now?
  Yes, protecting data and reputation is more valuable long-term than a three week delay.
- Am I free from external influence?
  She recognizes the Director's pressure but decides to prioritize professional ethics over personal comfort.
- Does it minimize harm?
  This choice minimizes the risk of catastrophic harm (data breach) over certain but minor harm (schedule delay), while minimizing risk of client disappointment.

Step 4: Application

Kristy applies the PMI Code of Ethics values to her candidate decision, Alternative C:

- Responsibility: Kristy takes responsibility for the quality of the project and the safety of the users, which is more important than meeting a timeline at all costs.
- Respect: Kristy respects the client by keeping them informed. She also respects the users by prioritizing protecting their data.
- Fairness: Kristy ensures fair dealings by not hiding critical information for the company's short-term benefit.
- Honesty: Kristy chooses transparency with stakeholders.

Step 5: Action

Kristy is comfortable accepting responsibility for this decision and feels good about making it public.

Actions:

- Kristy meets with the Director to prepare for a discussion with the client. The Director respects her decision and ultimately supports the call with the understanding that the client will make the final decision.
- She then schedules and leads a virtual conference call with the client.
- She informs the client about the vulnerability and the three week delay to incorporate all the security features.
- The client is disappointed but appreciates the transparency and the commitment to a secure product. The client reminds Kristy not to submit a final invoice until the mobile app is complete and live, per the agreement.
- The launch is delayed, but the company's reputation and user trust are maintained.

8. Stakeholder Impact Analysis

A stakeholder analysis is an important part of project decision-making processes. It is part of Step 3 in the PMI EDMF. It helps to consider the stakeholder benefits and risks for a candidate decision. See Table B for an example.

Table B: Stakeholder Impact Analysis for a Candidate Decision		
Stakeholder	Benefit	Risk
Customer	Safe product use; Clear expectations; Trust in brand	Harm from failures; Loss of confidence
Project Team	Ethical climate; Reduced stress of concealment; Psychological safety	Pressure; Blame
Sponsor / Client	Long-term reputation; Legal protection; Stakeholder confidence	Short-term gain but reputational damage; Legal liability
Public	Public safety; Fair access; Ethical use of resources	Social harm; Loss of trust

This can be considered as part of a larger stakeholder management plan for the project. Such a plan usually includes a list of stakeholders, often called a stakeholder register or stakeholder analysis matrix. See the blank template in Table C.

Table C: Example Stakeholder Register Template			
Stakeholder	Stakeholder Interest in the Project	Project Impact	Strategy for Support

Example stakeholders are shown in Figure 3. And potential approaches to gaining stakeholder input are shown in Figure 4.

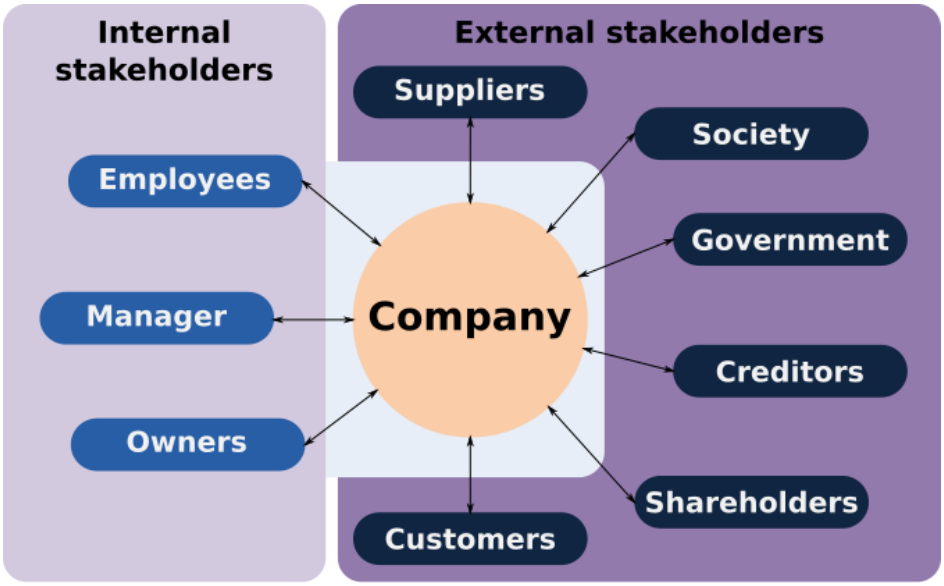


Figure 3: Potential stakeholders divided by "internal" and "external" to the project.
Source: commons.wikimedia.org/wiki/File:Stakeholder_(en).svg, Grochim, CC-BY-SA-3.0

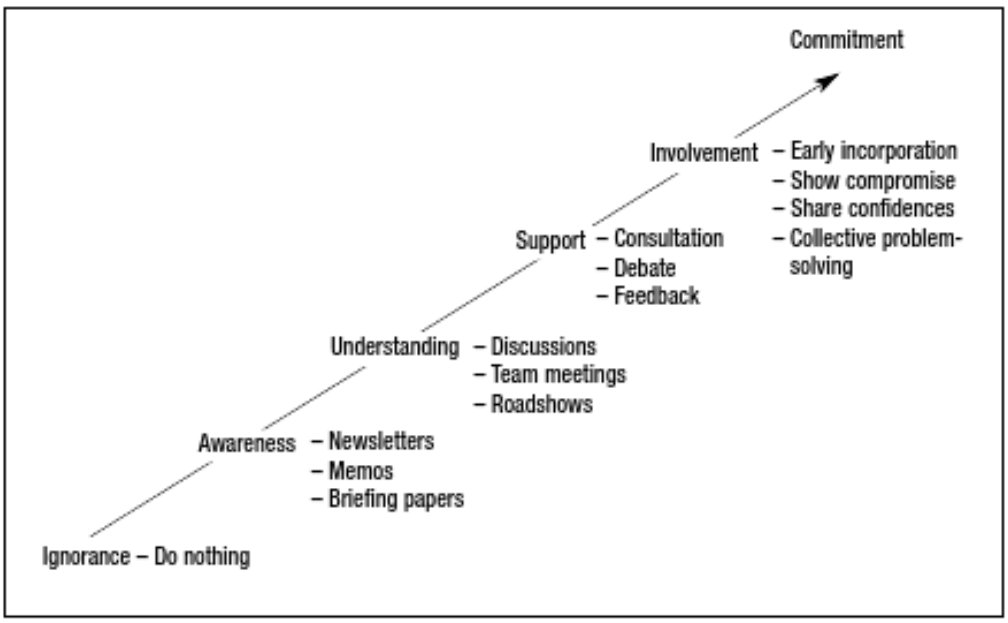


Figure 4: Steps that can be taken to ensure commitment with stakeholders.
Source: commons.wikimedia.org/wiki/File:Commitment_in_stakeholder_management.png, VY-ProjM, CC-BY-SA-3.0

9. Ethics Risk Matrix

An ethics risk matrix, also called an ethical dilemma matrix, displays how ethical issues can negatively impact a project based on the likelihood and impact of the risks. An ethics risk matrix can be made for the overall project or to help assess a particular issue. The matrix helps identify serious risks that require a strategy. It also can help when making an ethical decision, such as part of a Step 3 analysis in the PMI EDMF.

See Table D for an example Ethics Risk Matrix for a project. A risk register with mitigation strategies can correlate with the items in the matrix.

Table D: Ethics Risk Matrix

		Likelihood		
		Low	Medium	High
Impact	Low	Ethical Incident Low Risk	Decision Under Pressure	Unreported Misconduct
	Medium	Incident Managed with Controls	Stakeholder Impact Concerns	Major Ethical Breach
	High	Serious Concern Needs Escalation	Major Safety or Compliance Threat	Legal and Reputational Risk

Higher Likelihood and higher consequences require immediate escalation. Impact (consequence) is considered more important than likelihood.

10. Ethical Challenges and Best Practices

Every project relies heavily on the ethical behavior of the different people involved in it. Project professionals may struggle with dilemmas caused by competing stakeholder interests, resource constraints, multi-discipline coordination, quality issues, and commercial pressure. As issues come and go, project managers should identify potential ethical threats early enough to prevent or mitigate them.

The following are common ethical dilemmas and supportive guidelines based on experience and research.

10.1. Misrepresentation and Transparency Issues

When budget deficits, schedule delays, and quality issues are concealed, it becomes difficult to project finances and manage resources. It may appear projects are nearing completion, final payments can be made, and staff assigned to new projects. But in reality, significant work remains which eventually will impact bottom lines and draw scrutiny.

The solution is to provide clear, accurate, and honest project status information.

Best Practices Includes:

- Honest, timely communication for any significant change on the project.
- Perform regular team check-ins and estimate actual percent completes of tasks.
- Update project financials and staff forecasts, using organization software when required.
- Do a gut check on budget and schedule status. Request a quality review if something seems off or is of high importance.
- Foster an environment where people can communicate bad news.
- Organizations can perform audits of projects to confirm status.

See Figures 5 and 6 for example project status tracking software.

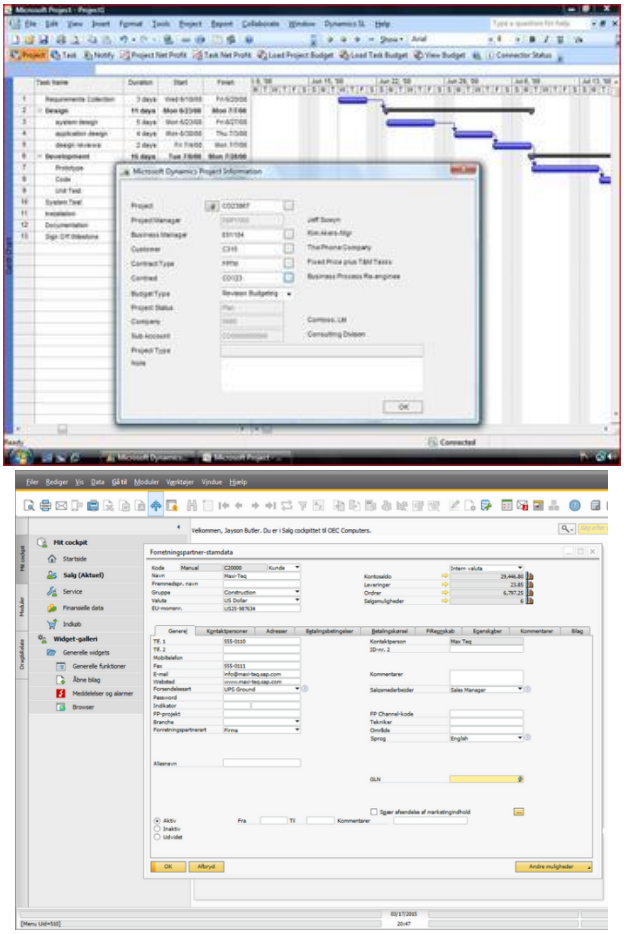


Figure 5: Example Enterprise Resource Planning (ERP) screens with project data.

Source: commons.wikimedia.org/wiki/File:Conector_de_Microsoft_Dynamics_SL.jpg, MarioCneo-9872, CC-BY-SA-4.0
commons.wikimedia.org/wiki/File:SAP_Business_One_Klient.png, Rwj dk, CC-BY-SA-3.0

Circular Driveway Design				Budget Status					
Project No. 04-4832						Assessment Date:	10/30/2023		
PM: Dee B.						Overall Budget Status:	UNDER	-$160	
TASK 1 - Prelim. Design	**RESOURCE**	**INITIAL BUDGET**	**% COMPLETE**	**EARNED TO DATE**	**SPENT TO DATE**	**% SPENT**	**BUDGET STATUS**	**AMOUNT OVER (UNDER)**	
30% Drawings			INPUT		INPUT				
Survey contract	PM	$ 500	100%	$ 500	$ 400	80%	UNDER	$	(100)
Perform survey	Sub	$ 3,000	100%	$ 3,000	$ 3,000	100%	ON BUDGET	$	-
CAD setup	CAD	$ 2,000	100%	$ 2,000	$ 1,800	90%	UNDER	$	(200)
Incorporate survey data	CAD	$ 2,000	50%	$ 1,000	$ 1,200	60%	OVER	$	200
Existing conditions plan	CAD	$ 3,000	50%	$ 1,500	$ 1,000	33%	UNDER	$	(500)
Driveway layout	Civil	$ 3,000	67%	$ 2,010	$ 2,500	83%	OVER	$	490
Check turn radius	CAD	$ 500	50%	$ 250	$ 200	40%	UNDER	$	(50)
Define slopes	Civil	$ 500		$ -	$ -	0%	N/A	$	-

Contingency	Other	$ 3,000		$ -	$ -	0%	N/A	$ -
TOTALS								$ -
Total to Date		$ 40,000	40%	$ 10,260	$ 10,100	25%	UNDER	$ (160)

Figure 6: Example budget tracking spreadsheet showing under budget.
Source: Author

10.2. Conflicts of Interest

Situations involving personal gain can compromise fairness and accountability, as impartial judgments and decisions may be made. Sometimes just the appearance of bias erodes trust and reputation.

Best Practices Includes:

- Declare any potential conflicts of interest immediately and in writing. Examples include personal relationships with client or supplier staff, business ownership or interests related to client or suppliers, a personal business that competes with client or suppliers.
- Objective criteria should be used and documented when making a decision.
- Organizations can perform audits by questioning staff for potential conflicts of interest.

10.3. Quality Shortcuts

Confronted with a shrinking budget remaining and time constraints slipping out of reach, a project manager or team members may opt to circumvent mandated quality reviews and inspections. Obviously, this adds an extreme risk to the project and organization, to the point that quality shortcuts can be seen as ethical issues.

Best Practices Includes:

- Prepare and follow a quality management plan.
- Discuss quality review and inspection statuses at progress meetings.
- Insist that agreed quality reviews be performed.

10.4. Safety

Making decisions with safety implications falls into the realm of ethics since peoples lives and health are at risk. Any project with physical work, production activities, or field work should have a safety plan and be assigned a safety manager. A project manager should not try and circumvent the safety plan and safety manager.

Best Practices Includes:

- Employee safety and compliance is always a priority that should never be compromised.
- Ensure a safety plan is in place and being followed.
- Incorporate elements of safety into the design of products and improvements. This is called Prevention through Design or Safety in Design.

10.5. Culture, Diversity, and Respect

Discrimination can have a big negative impact on the morale, team, and project. Human resources and legal staff may need to get involved to correct the issues and help restore an environment of respect.

Best Practices Includes:

- Encourage an environment where everyone feels safe and comfortable.
- Tackle offensive activities and attitudes quickly.
- Encourage equal participation in planning and problem solving.
- Understand your organization's policy and be prepared to enact them.

10.6. Confidentiality and Data Protection

Confidentiality of protected project data is essential because it protects individuals and organizations from harm, maintains trust for future business, and is often a legal requirement. Breaches of confidentiality can lead to significant financial, legal, and reputational damage for both the individuals and organizations involved.

Best Practices Includes:

- Execute non-disclosure agreements with client and suppliers, as needed
- Enforce secure data-handling and storing protocols.
- Review lists of names with access to sensitive data.
- Employee training should include guidelines for handling confidential information.

10.7. Pressure from Stakeholders

Pressure from stakeholders can pressure project managers to cut corners, manipulate data, or ignore risks in order to meet deadlines, budgets, and other conflicting interests. This pressure can force project managers into making difficult choices that compromise quality, safety, or honesty, such as misrepresenting progress, concealing problems, or creating scapegoats.

Best Practices Includes:

- Seek the advice of peers, supervisors and managers to address project specific issues.
- Document actions taken, including decisions and communication.
- Utilize an ethical decision-making framework such as the PMI EDMF



Figure 7. Leaders discussing options to resolve a problem.

Source: commons.wikimedia.org/wiki/File:Project,_program_managers_get_lesson_in_risk_communication_(11437108224).jpg

10.8. Ethics with using AI

There are a growing number of AI-based tools for project management. AI can provide several benefits to a project, including efficiency and risk reduction. AI software utilizes AI algorithms which can learn by looking at past data, create new logic/rules, to apply these to new situations.

AI tools for project professionals include the following:

- Virtual PM Assistant
- Document Preparation
- Predictive Analytics
- Risk Assessment
- Scheduling
- Meeting Tools
- Automated Task Management
- Project Audits
- ERP with AI
- Digital twins

Explainable Artificial Intelligence (XAI) is any transparent AI program that can clearly explain design decisions, actions taken, and model results to human users. Engineers and project managers should utilize XAI, review any decisions, and document AI usage.

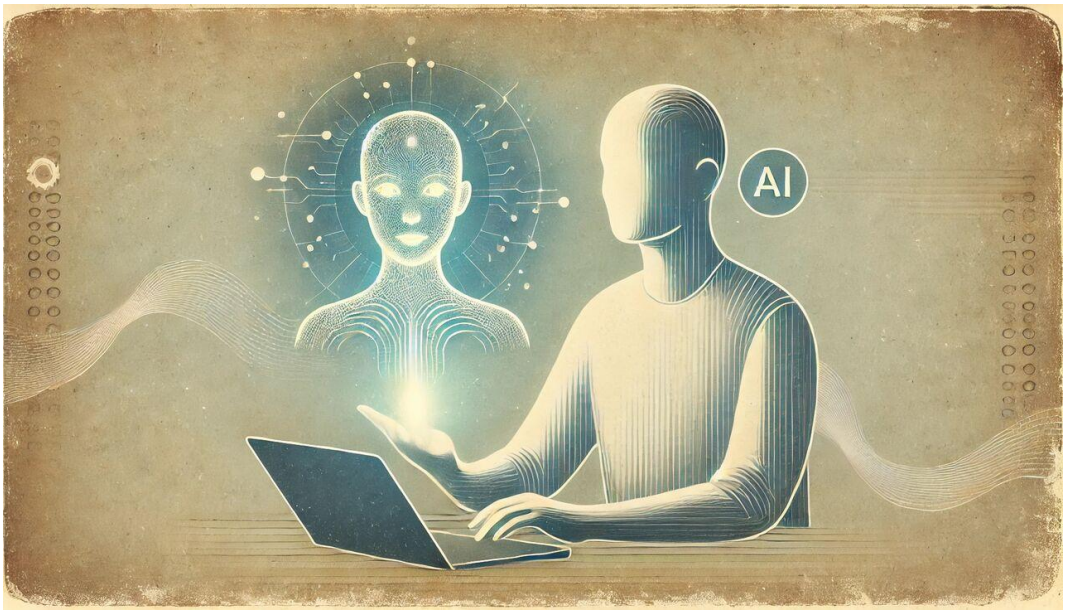


Figure 8: Depiction of a virtual assistant within a computer.
Source: https://dri.es/i-gave-an-ai-agent-edit-access-to-my-website

10.9. Motivation for Ethical Practice

Ethical excellence in projects implies a conscious effort of consistency with transparency, fairness, and integrity based on established standards. Organizations flourish as project professionals uphold and support ethics. Benefits include:

- ✓ Stronger stakeholder trust
- ✓ Improved project outcomes
- ✓ Reduced compliance risk
- ✓ Sustainable organizational reputation

A project leader/manager should share this vision with team members since everyone has a role in ethical excellence. Don't be afraid to share your commitment to ethical principals!



Figure 9. Ethical collaboration fosters trust, mutual respect, and transparent communication among project stakeholders.
Source: commons.wikimedia.org/wiki/File:Expedition_57_Crew_Returns_to_Baikonur_(NHQ201810110009).jpg

11. Course Summary

Applying ethical principles when leading projects brings about more long-term success for both the projects and the organization.

Project managers, design managers, and other project leaders are subject to behavior standards set and enforced by:

1. Federal, state, or local regulations (laws and rules)
2. Employers (corporate policy, office standards, employment agreements, etc.)
3. Professional organizations (PMI, NSPE, etc.)

This course suggests the following steps to apply ethical principles when managing projects:

1. Review applicable policies on code of conduct
2. Review applicable procedures on project management
3. Review professional ethics standards
4. Apply ethics with a decision-making framework

The *NSPE Code of Ethics for Engineers* is organized into three sections:

I. Fundamental Canons
II. Rules of Practice
III. Professional Obligations

The *PMI Code of Ethics and Professional Conduct* is the most popular ethics standard for project management. The purpose of the PMI Code of Ethics is to help project management professions become better practitioners. The code is organized by four core ethical values:

1. Responsibility
2. Respect
3. Fairness
4. Honesty

The *Code of Ethics* by the Center for Project Innovation (CPI) is meant to guide alumni and project professionals in the best practices of ethical decision making in project management. The Code presents the following ten principles:

1. Professional Integrity
2. Conflicts of Interest
3. Ethical Remuneration
4. Data Privacy
5. Fair Competition

6. Compliance and Respect
7. Honest Representation
8. Equality and Fairness
9. Keeping Promises
10. Accountability

The PMI Ethical Decision-Making Framework (PMI EDMF) serves as a guide for project professionals when facing ethical dilemmas. The PMI EDMF contains the following steps:

1. Assessment
2. Alternatives
3. Analysis
4. Application
5. Action

For Step 3, Analysis, it is helpful to perform a stakeholder impact analysis and create an ethics risk matrix.

Ethical challenges for a project professional to manage include:

- Misrepresentation and Transparency Issues
- Conflicts of Interest
- Quality Shortcuts
- Safety
- Culture, Diversity, and Respect
- Confidentiality and Data Protection
- Pressure from Stakeholders
- Ethics with using AI

12. References

Center for Project Innovation (2025). Code of ethics. https://project.info/code-of-ethics/

Machado, M. (2023). *Project management ethics: Importance of integrity and accountability.* Institute of Project Management Blog. https://instituteprojectmanagement.com/blog/project-management-ethics-importance-of-integrity-and-accountability/

National Society of Professional Engineers (NSPE) (2019) “NSPE Code of Ethics for Engineers“. https://www.nspe.org/resources/ethics/code-ethics

Project Management Institute. (2025). *PMI Code of Ethics and Professional Conduct.* PMI. https://www.pmi.org/about/ethics/guidelines

Project Management Institute. (2023). *PMI Ethical decision-making framework (EDMF). Ethics Insight Team,* PMI. https://www.pmi.org/about/ethics/guidelines

Robb, D. J. (1996). *Ethics in project management: Issues, practice, and motive.* PM Network, 10(12), 13–16.

Sarhadi, M., Zibaei, M., & Javadi, M. (2022). *A qualitative analysis of unethical behaviors in projects.* Project Management Journal, 53(1), 77–98. https://doi.org/10.1177/87569728211037775

Turner J.R., & Müller R. (2020). *The Ethics of Projects: Managing People Purposefully Towards Success* (2nd ed.). Routledge.

Walker, L. (2019). *Ethics in project management research on values-based leadership.* OTMC Journal, *6(*Special Issue), 45–60. https://otmcj.grad.hr/clanci/vol%206_spec/6_OTMC.pdf

Ying, S., Taj Raisani, S., Ratkovic, N., & Kamal, A. (2024). *Investigating ethical dilemmas faced by project managers and the implementation of ethical standards and codes of conduct in project management practice.* Journal of Management & Engineering Research International, 2(1). https://doi.org/10.5281/zenodo.11128044

Ethics for Leading Engineering Projects - Quiz

Updated: 3/30/2026

1. Which does NOT set behavior standards that apply to professionals?
a. State regulations
b. Employers
c. Nature conservancy
d. Professional organizations

2. Which is a good first step to apply ethics to a project?
a. Review applicable policies
b. Use a decision-making framework
c. Kick-off meeting
d. Go with your gut

3. Which is NOT a core value in the PMI Code of Ethics?
a. Fairness
b. Accomplishment
c. Honesty
d. Respect

4. Which core value is associated with negotiating in good faith in the PMI Code of Ethics?
a. Fairness
b. Honesty
c. Responsibility
d. Respect

5. Which core value is associated with correcting errors and omissions?
a. Fairness
b. Honesty
c. Responsibility
d. Respect

6. Which is NOT a principle in the CPI Code of Ethics?
a. Data Privacy
b. Fair Competition
c. Caution with Technology
d. Equality

7. Which are the first three steps of the PMI EDMF?
a. Advice > Reflection > Analysis
b. Assessment > Alternatives > Analysis
c. Advice > Alternatives > Action
d. Assessment > Alternatives > Document

8. A PM should be willing to accept responsibility for a decision before acting.
a. True
b. False

9. Which helps avoid misrepresentation of project status?
a. Regular team check-ins
b. Lessons learned
c. Safety plan
d. Flow diagram

10. Which helps protect project information from getting in the wrong hands?
a. Meeting notes
b. Multiple cloud servers
c. Risk register
d. Non-disclosure agreements