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Communicating: Principles

Chapter Overview

Engineering is about creating solutions for the benefit of people, society, and the environment. Because modern engineering projects involve many collaborators and stakeholders, we must be able to communicate our ideas and solutions effectively to others if we are to see them implemented. Additionally, our ability to communicate is crucial to our success in team environments.

Communication is influenced by many factors, such as the context, the writer's purpose, the audience(s), and the channels of communication. To be effective in our communications, we must be cognizant of these factors and craft our messages accordingly. For example, a message appropriate for one cultural context may be considered offensive in a different cultural context. As engineers, we will be communicating through a variety of channels, such as reports, emails, phone calls, meetings, one-on-one conversations, and social media postings.

There are three basic types of communications: expressive, informative, and persuasive. In informative communication, such as a project progress report, the emphasis is on providing useful information, and we rarely express our feelings. In persuasive communication, such as a project proposal, we aim to motivate our audience towards a specific action. In expressive communication, we express our feelings and opinions, and the emphasis is on us, whether as speakers or writers. The textbook suggests that social media is used primarily for expressive communication, although this may be evolving.

As engineers, we will be communicating daily with audiences of varying cultural, educational, and professional backgrounds. Internal audiences are people in your organization, such as your supervisors, peers, and subordinates. They can be decision-makers, advisers, or implementers. External audiences are people outside your organization, such as customers, suppliers, contractors, stockholders, and the general public. To communicate effectively, we need to consider the needs, con-

cerns, and backgrounds of our audience. For example, the strategy required to communicate technical information to a lay person is different from the strategy required to communicate the same information to a colleague familiar with our work.

The aforementioned factors (context, purpose, audience, channel) will determine the organization, style, and tone of our communication. We will focus on writing here because it is the most common form for technical communication. Most written documents employ a direct pattern of organization, starting with the main points, developing it and supporting it with data in the body of the document, and reinforces it in the conclusion. The style of communication results from choices, such as word choice, word order, sentence length, and sentence structure. The style may change based on the context, purpose, audience, and occasion of the writing, but writers typically develop a "personal style." In collaborative writing, the team of writers will need to harmonize their styles during the revision process. The tone of engineering communication can range from friendly to formal, depending on your relationship with the audience as well as the occasion. Different perspectives are used for different types of documents. First person "I" is mostly used in everyday correspondence. Second person "you" is often used to advise the audience in manuals and instructions. In formal or technical writings, a third person and impersonal perspective is often adopted. As engineers, you will be working with large quantities of data. In this communication situation, it is your responsibility to interpret, organize, and synthesize the data, and present them as meaningful information that is able to be understood by your audience. Lastly, remember that it is your ethical responsibility as an engineer to communicate with integrity and honesty because others will use your communications as the basis for their decision makings.

Learning Objectives

In this chapter, you will:

- explore why communication is so important to engineers;
- learn to see communication as a process;
- learn the principles of communication with a focus on writing;
- learn to analyze the context, purpose, audience of communication, and study their impact on the crafting of message; and
- learn about the organization, style, and tone of communication.