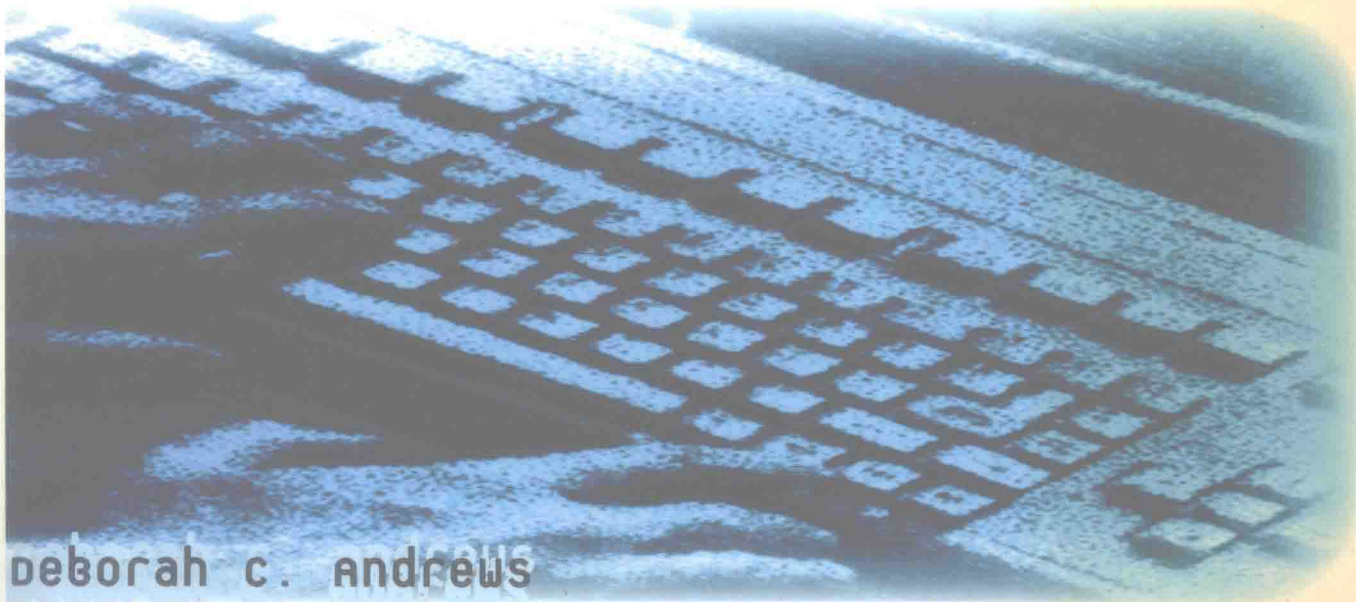# technical communication

IN THE GLOBAL COMMUNITY

Deborah C. Andrews

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DRAWN FROM TECHNICAL COMMUNICATION IN THE GLOBAL COMMUNITY
AND WRITINGS FROM THE WORKPLACE: DOCUMENTS, MODELS, CASES

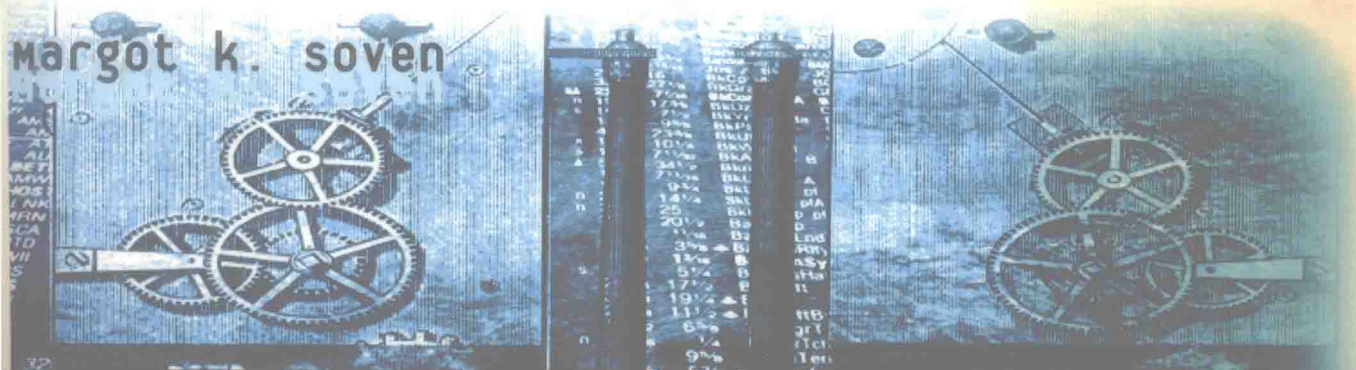# technical communication

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Copyright Acknowledgments

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Part I: Performing Your Role as a Communicator

Introduction

"Communication equals remembering what it was like not to know"

RICHARD S. WURMAN

This book is about communicating scientific and technical information to a wide range of readers and listeners on varying occasions. As a technical professional, you will live by your words. You will have to provide the right information to the right people, in the right way. In this chapter, you will begin the process of learning how to make the right choices about information and expression.

A fundamental and easily stated premise underlies this book:

Technical communication occurs in a context, and that context is increasingly international.

Before you communicate, and as you revise your communications, examine each element of this context. Here are the major ones:

- Your audience
- The purpose and use of the communication
- Your information
- The delivery system
- The culture in which the communication is occurring

For any one communication, some elements are more important than others and thus require more attention. One particular element may offer special opportunities or pose special problems. But whatever their relative importance, you need to examine them all, as you'll learn in the next section.

The Context for Technical Communication

To set the stage, then, for defining what technical communication *is* and explaining how you can perform well as a technical communicator, let's look briefly at each element of the context. Keep in mind as you read that the elements overlap and interweave. The rest of the book deals with each in much greater detail. *A Closer Look: The 21st Century Workplace* also suggests some dimensions of the context for communication in your career.

Your Audience

Although you may think that technical communication is about *things,* it is really about people: how people relate to each other and to technology. So the first, most important element in most technical communication is your audience. You have to choose the right audience to address or, more frequently, address in the right way whatever audience has requested your work. Your writing has to make sense to people who need to know something you know, and it must satisfy their need. Often, they will have paid you—handsomely, one hopes—to answer their questions, help them make a decision, or instruct them on the use of a system or a tool. You help your audience to understand and to do.

Think about *why* your audience is reading. They don't read to find out everything you know or want to say but, rather, to learn what they require to get on with the work at hand. According to physicist John Rader Platt,

> The failure to recognize a brilliant man is only partly due to the stupidity or stubbornness of the scientific community; it is also partly his own fault.
>
> For brilliance has an obligation not only to create but also to communicate. A scientist ... takes from others; he gives to others. He must address the problems of his time. He must translate his thoughts into the language of his contemporaries. He must scatter them abroad for interaction. A thought which has not penetrated to other minds will die unfruitful. (Aaronson 7)

Think, too, about *how* your audience reads. In an environment that bombards people with too much information, readers are often resistant, or

A CLOSER LOOK

The 21st Century Workplace

The Wall Street Journal sums up as follows the former U.S. Labor secretary's top five "career tips" for students entering the work force in the twenty-first century:

1. Whether you work in an office or manage a crew that cleans it, you must be computer literate.
2. Keep your skills sharp and continue your education.
3. Ditch the ladder; catch the web. Smart workers move along webs, earning more from expertise, not from seniority.
4. To hone your skills, "network" with others in your profession.
5. Tomorrow's workers will function as "teammates." Learn to play all positions and win as a team. (Burkins 1)

Such skills fit the changing conditions of an increasingly international workplace. Compared to today, for example, that workplace will be

- leaner, with fewer layers of management. People will need to work more independently, with computers performing many routine supporting functions.
- more networked, less hierarchical, with an emphasis on sharing rather than withholding information.
- more flexible in its processes. Instead of a static structure of fixed and isolated jobs, it will be organized dynamically to meet goals through projects.
- more flexible in its spaces, with people distributed geographically and linked electronically.
- more collaborative, with people moving in and out of teams as goals and projects demand.
- more culturally diverse.

at least reluctant, to read. So they develop strategies like skimming text and scanning headings and visuals to cope with the overload of information. To write well, you need to match their method of reading.

Consider *how skilled* the audience is at reading about the subject of your discussion. In your career, you'll write for a variety of audiences, including your technical colleagues, professionals who are not in your field, customers, clients, and the general public. Your audience will try to make sense out of a document in light of their experiences, their values, their familiarity with terms and concepts, and their opinions about you and your organization. You will need to keep their level of expertise and interests in mind.

In addition, keep in mind *what else they have read or heard* about the topic or situation you are addressing. Rarely are documents one-time deals. Most

reflect a series of communications on the topic, and you need to write with that series in mind to control the range of possible interpretations of what you say.

Purpose and Use

Your writing, then, is not just communication for its own sake, no matter how elegant. It's meant to get a job done, to meet a specific need, at a specific time. That purpose or use is the second element in the context. Here are three general purposes for communicating:

- To record
- To inform
- To persuade

When you write to *record*, as in a lab notebook or insurance form, you establish the facts of the case. You describe and define things as accurately as possible. Often, you use visuals and numbers more than words. A weather map, for example, records information (Figure 1.1).

When you write to *inform*, you want readers to understand what you know. You interpret and shape the information to meet a particular reader need. Based on the weather maps, for example, you may draw other diagrams and explanations that help readers understand the movement of the jet stream or deviations from normal in a city's record of high temperatures over the period.

When you write to *persuade*, you want readers to act in a certain way, come to a decision you think is right, change their attitude toward something, or agree that something you think is significant is indeed significant. For example, you might use the summer's weather data to convince your manager that your building needs central air conditioning.

In determining your purpose, consider, too, how readers will *use* your information: As a reference, for example, while they operate some machinery or apply a policy? As a reminder of something to do that will be tossed when the action is undertaken? As the source of information to be filed with other documents on the topic? Imagine as you write a scene in which the reader is using the document and design your approach to make that use as easy as possible.

Information

Third, In designing your approach, you will need to select the right information to match the audience and the purpose. As a technical professional, you will work with information that can be dense, complex, abstract, qualified—and overwhelming. Some of it is concrete and close to observed nature. Some deals with concepts many levels removed from things you can see. Most technical communication carries a heavy burden of information. One of your responsibilities as a technical communicator will be *managing* that information. You need to know how to develop information from observation, experiment, and reading, including strategies for retrieving information from print and electronic sources. Once you have found information, you will have to sift
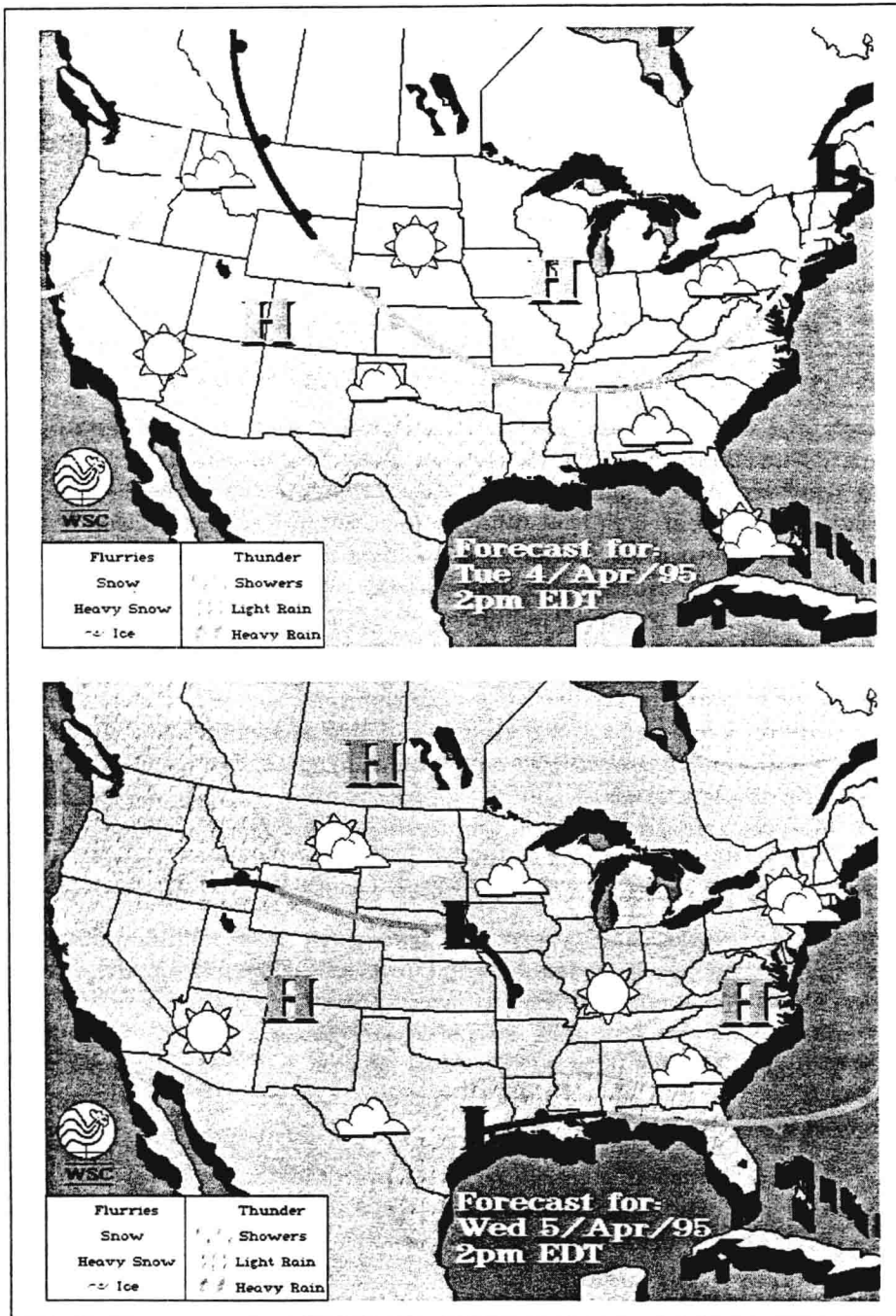
FIGURE 1.1 Recording Information
These maps from the U.S. National Weather Service are popular features in newspapers, on the World Wide Web, and on television. They show the movement of air masses and predict the likelihood of precipitation. More detailed maps provide temperature readings and wind velocities. Other computer-generated maps allow you to zoom in on a particular area for even more specific information about temperature, precipitation, and wind conditions.
(Courtesy of Weather Services Corporation.)

through it, filtering out irrelevancies and errors and assembling *good* information. You then arrange and express your material in a way that establishes priorities, clearly describes phenomena or concepts, or supports an argument.

Delivery

Fourth, to convey your information effectively you'll need to choose the right way to deliver your message. Matters of delivery are the traditional core of texts that advise you about how to write. Choosing the right delivery means choosing the right language and style, adhering to any conventions or standards that apply to your message, following the format of an applicable document genre, and sending your message through the right medium.

Language.   Select the appropriate language and style for communication. Even if that language is English, you are likely to augment your discussion with numbers, images, and sounds as well as words. Images in particular play an important role in technical and scientific communication and may be the major language for presentations, especially on the World Wide Web and in instructional manuals that cross national and cultural borders. In addition, you may need to accommodate audiences reading English as a second (or third or fourth) language or write in an English that is easy to translate.

Conventions.   Learn and adhere to any conventions or standards that apply to what you are writing. Many scientific and technical documents reflect strict conventions of presentation. They are written "to spec"; that is, they conform to specifications in content, order of presentation, citation of references, expression of dates, and the like. The organization requesting the work—for example, a publication or a government agency—makes the rules you follow. These conventions ease both the recording and the reading of information.

Genre.   Match reader expectations, too, in the genre or type of document you are writing. Many situations for writing repeat themselves, and thus a pattern has emerged for arranging documents that meet that situation. An approach for reporting original scientific research in a report or article, for example, is so well ingrained that it is known by its acronym, IMRAD: Introduction, Materials and method, Results, And Discussion (Figure 1.2). The following list suggests other common genres:

- Correspondence that connects people worldwide, including e-mail postings, memos (circulated generally within an organization), and letters (circulated to readers outside an organization)
- Procedures and manuals that instruct readers about how to behave or how to operate or maintain some device or system
- Abstracts that summarize other documents and can circulate as standalone items or appear as part of a parent document

FIGURE 1.2 "An Analysis of Facial Expressions in the Rat" (opposite page)
This brief (and humorous) article shows the IMRAD conventions at work. For a more detailed discussion of this strategy for arranging a scientific argument, see Chapters 17 and 22.
(Source: *The Worm Runner's Digest*, Vol. 21, no. 27 [1979] 81–82.)

AN ANALYSIS OF FACIAL EXPRESSIONS IN THE RAT

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It has long been known that facial expressions may be a sensitive indicator of an organism's emotional state. Who can forget Darwin's classic work, *The Expression of the Emotions in Man and the Animals* (1872), in which he painstakingly catalogued the faces of primates to illustrate his point. This area of investigation has found favor with modern researchers as well. Marriott and Salzen (1978) have analyzed the facial expressions in a colony of captive squirrel monkeys and they, like Darwin, have concluded that a smile is worth a thousand words.

All things considered, it is really surprising that no one has gone to the trouble to record and analyze the facial expressions of the ubiquitous rat. This surely must be an oversight and we intend to put things right. There has, of course, been related work with mice (Disney), thus indicating that the problem is not insoluble. A little effort is all that's needed.

If we've learned anything from the past decade of animal psychology, it's that we must really know our subjects before we can work with them. And what better way to know anyone than to study his or her face?

METHOD

Subjects. Our subjects came from a colony of laboratory rats. We could only get used ones, so they came to us in a variety of moods; some happy, some sad, some scared to hell, depending upon the studies in which they'd participated.

Procedure. We watched our subjects for three months. *Really* watched them. Then we drew them.

RESULTS AND DISCUSSION

Figure 1 illustrates the faces of rats produced by 12 separate and distinct mood states. It is notable that a high degree of similarity exists between the facial expressions associated with each of these moods. We're not too sure why this happened. Without getting too graphic, we can assure you that the procedures we used to induce the different mood states were effective. Similarly, our artists and observers were no slouches.
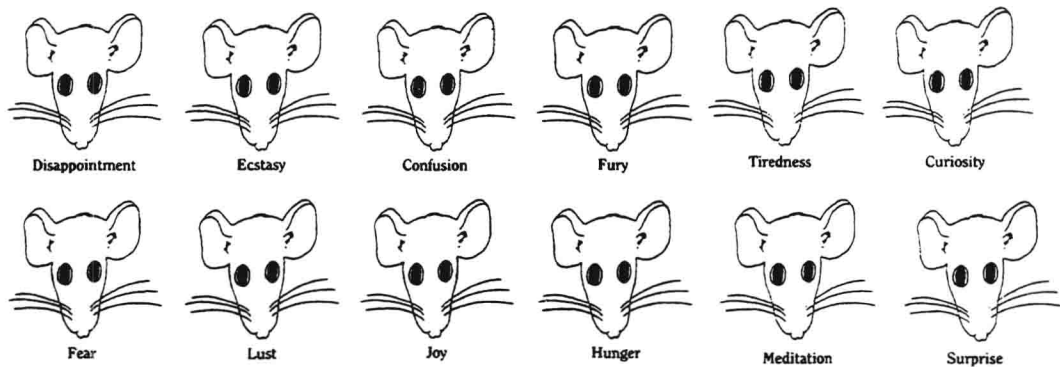
Figure 1. Selected Expressions

One possiblility is that our rats, born and reared in the lab, have been stultified for generations and have lost their facial-expressive abilities. It is therefore essential that our study be repeated under more natural conditions. The only remaining conclusion, and it's a bit late to be worrying about this, is that rats may not be as facially expressive as we initially thought. Maybe this is why nobody else has messed around with this stuff before. Anyway, it may be about time to validate some of the widely circulating reports of Disney and his colleagues.

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ELECTRONIC EDGE

Emoticons

Because current electronic mail (e-mail) messages don't allow the sender to highlight or use different typefaces to emphasize text as they would in a paper document, messages tend to look alike as they cross the reader's screen. To suggest how you feel about your message as well as how the reader should take the message, and to convey the sense of a phone call for which e-mail often substitutes, you may include one or more of a growing stock of *emoticons*. The term combines "emotion" and "icon." Derived from standard marks of punctuation, emoticons provide the e-mail equivalent of facial expressions. Those listed here make sense when you read them sideways.

:-)	The basic smiley
:^D	That's great!
;-)	A wink that might suggest sarcasm or conspiracy
:-(	Frowny face. The sender is sad or didn't like a comment being responded to
8-(	Something's very wrong
:<	Super frowny face
:-/	Skeptical
:-I	Indifference
:-0	Surprise
>:->	Devilish
:-D	Laughing
(:-E	Anger or >:-(
:-*	Oops!
I-I	Sleepy
:'-(	Crying

- Proposals that identify a problem or need, describe an approach to solving the problem or meeting the need, and seek approval and funds for the writer to do the work or supply the product or service
- Reports that complete a stage in a project (progress report), document a project or investigation (information report), or support a future action (decision-making report)
- Articles for publication that enhance the understanding of technical, semitechnical, or popular audiences and enrich the reputation of the author

You'll read in detail about each of these genres in Parts 4 and 5.

Media. Choose the best medium for delivering your message. The range of media is expanding greatly, especially in response to innovations in electronic technology. Computers, cameras, telephones, fax machines, cable, television, videos, and sophisticated printers are converging in a vast international

;-&	Tongue-tied
8-o	Eyes wide with surprise
8-O	Eyes wide with *real* surprise—oh no!
:-@	Screaming

Such emoticons were developed mainly in the United States and often perplexed people in other countries. Japanese computer users, for example, found them difficult to read and evolved their own set which are perhaps more ambiguous in expression although they have the advantage of reading right side up. The basic Japanese smiley (^-^) looks more like a face, but the lack of parentheses on a Japanese keyboard means that the mouth can't curve, and thus it is harder to understand the meaning out of context. One commentator notes that blank expression is similar to that in the masks used in traditional Japanese dramas; the masks convey significance to those who understand. The Japanese tend to use emoticons, or what they call "face marks," frequently. The symbols are similar to the pictograms that are basic to the Japanese language itself, and they provide an online equivalent for the facial expressions and context clues that govern all communication in a high-context society. Japanese conversations tend to rely much less on words, and vague expression helps avoid confrontation. Thus the Japanese rarely use face marks that show anger; the most popular mark, besides the basic smiley, is one that identifies a cold sweat (^^;). Another means "excuse me" (^o^;>); in this mark, the (>) represents an elbow, showing that an embarrassed or apologetic person may scratch the back of his or her head (Pollack D4). The mark for a woman's smile (^.^) further reflects polite behavior: in Japan, women do not show their teeth in a grin and may even cover their mouth with their hand.

electronic network that is radically changing the context for communication. This network speeds things up. It fosters interaction. It gives readers even greater power to select what to read and to display information in a format and order they choose. Electronic technology not only transfers information, but it is also changing the genre in which information appears. Electronic mail, for example, is not just an electronic form of a memo. To be an effective communicator in the twenty-first century, you will need to take advantage of the options available through electronic delivery.

Culture

A final element that infuses all the others is *culture*. As a technical professional, you will need to communicate across differences in the cultures of individual organizations as well as across the many cultures of the global economy. *Crossing Cultures: The Global Economy* suggests how the setting for technical and scientific communication has become international and multicultural.