Technical communication

Technical communication is the process of conveying information through writing, speech, and other media to a specific audience. Information is usable if the intended audience can perform an action or make a decision based on it (Johnson-Sheehan 7). Technical communicators often work collaboratively to create products (deliverables) for various media, including paper, video, and the Internet. Deliverables include online help, user manuals, technical manuals, White papers, specifications, process and procedure manuals, industrial videos, reference cards, data sheets, journal articles, patents, training, business papers and technical reports.

Technical domains can be of any kind, including the soft and hard sciences, high technology including computers and software, consumer electronics, and business processes and practices.

Technical communication jobs include the following:

- Technical writer
- Technical editor
- Technical illustrator
- Information architect
- Usability expert
- User interface designer
- User experience designer
- Technical trainer
- Technical translator
- API Writer

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History

The origin of technical communication has been variously attributed to Ancient Greece, The Renaissance, and the mid 20th Century. However, a clear trend towards the professional field can be seen from the First World War on, growing out of the need for technology-based documentation in the military, manufacturing, electronic and aerospace industries.

In the United States, two organizations concerned with improving the practice of technical communication were founded on the East Coast in 1953: the Society of Technical Writers, and the Association of Technical Writers and Editors. These organizations merged in 1957 to form the Society of Technical Writers and Editors, a predecessor of the current Society for Technical Communication (STC).

In the United Kingdom, the Institute of Scientific and Technical Communicators (ISTC) was formed in 1972 by the amalgamation of three existing associations: the Presentation of Technical Information Group (established in 1948), the Technical Publications Association (established in 1953, later the Institution of Technical Authors and Illustrators) and the Institute of Technical Publicity and Publications (established in 1963).

Content creation

Technical communication is sometimes considered a professional task for which organizations either hire specialized employees, or outsource their needs to communication firms. For example, a professional writer may work with a company to produce a user manual. Other times, technical communication is regarded as a responsibility that technical professionals employ on a daily basis as they work to convey technical information to coworkers and clients. For example, a computer scientist may need to provide software documentation to fellow programmers or clients.

The process of developing information products in technical communication begins by ensuring that the nature of the audience and their need for information is clearly identified. From there the technical communicator researches and structures the content into a framework that can guide the detailed development. As the information product is created, the paramount goal is ensuring that the content can be clearly understood by the intended audience and provides the information that the audience needs in the most appropriate format. This process, known as the 'Writing Process', has been a central focus of writing theory since the 1970s, and some contemporary textbook authors have applied it to technical communication.

Technical communication is important to engineers mainly for the purpose of being professional and accurate. These reports supply specific information in a concise manner and are very clear in their meaning if done correctly.

The technical writing process can be divided into five steps:
1. Determine purpose and audience
2. Collect information
3. Organize and outline information
4. Write the first draft
5. Revise and edit

Determining purpose and audience

All technical communication is done with a particular end in mind. The purpose is usually to facilitate the communication of ideas and concepts to the audience, but may sometimes be used to direct the audience in a particular course of action. The importance of the audience is in the notion that meaning is derived from the audience's interpretation of a piece of work. The purpose may be something as simple as having the audience understand the details of some technological system, or to take a particular action using that system. For example, if the workers in a bank were not properly posting deposits to accounts, someone would write the procedure so these workers might have the correct procedure. Similarly, a sales manager might wonder which of two sites would be a more appropriate choice for a new store, so he would ask someone to study the market and write a report with the recommendations. The sales manager would distribute the report to all parties involved in making that decision. In each of these instances, the person who is writing is transferring knowledge from the person who knows to the person who needs to know. This is the basic definition of technical communication.

The most commonly used form of technical communication is technical writing. Examples of technical writing include: project proposals, persuasive memos, technical manuals, and users' guides. Such materials should typically present an (informal) argument and be written diplomatically. A user's guide for an electronic device typically includes diagrams along with detailed textual explanations. The purpose should serve as a goal that the writer strives toward in writing.

The identification of the audience affects many aspects of communication, from word selection and graphics usage to style and organization. A non-technical audience might not understand, or worse, not even read a document that is heavy with jargon, while a technical audience might crave extra detail because it is critical for their work. Busy audiences do not have time to read an entire document, so content must be organized for ease of searching, for example by the frequent inclusion of headers, white space and other cues that guide attention. Other requirements vary on the needs of the particular audience.

Examples:

In Government:

Technical communication in the government is very particular and detailed. Depending on the particular segment of the government (and not to mention the particular country), the government component must follow distinct specifications. In the case of the US Army, the MIL-spec (Military specification) is used. It is updated continuously and technical
communications (in the form of Technical Manuals, Interactive Electronic Technical Manuals, Technical Bulletins, etc.) must be updated as well.

The Department of Defense utilizes Technical Manuals regularly and is a core part of the agency's responsibilities. Although detail oriented in their requirements, the DoD has deficiencies in technical communication. The following paper discusses those deficiencies and identifies the major contributing factors.

Collecting information

The next step is to collect information needed for accomplishing the stated purpose. Information may be collected through primary research, where the technical communicator conducts research first-hand, and secondary research, where work published by another person is used as an information source. The technical communicator must acknowledge all sources used to produce his or her work. To ensure that this is done, the technical communicator should distinguish quotations, paraphrases, and summaries when taking notes.

Organizing and outlining information

Before writing the initial draft, all the ideas are organized in a way that will make the document flow nicely. A good way of doing this is to write all random thoughts down on a paper, and then circle all main sections, connect the main sections to supporting ideas with lines, and delete all irrelevant material.

Once each idea is organized, the writer can then organize the document as a whole. This can be accomplished in various ways:

- Chronological: This is used for documents that involve a linear process, such as a step-by-step guide describing how to accomplish something.
- Parts of an object: Used for documents which describe the parts of an object, such as a graphic showing the parts of a computer (keyboard, monitor, mouse, etc.);
- Simple to Complex (or vice versa): Starts with the easy-to-understand ideas, and gradually goes deeper into complex ideas.
- Specific to General: Starts with many ideas, and then organizes the ideas into sub-categories.
- General to Specific: Starts with a few categories of ideas, and then goes deeper.

Once the whole document is organized, it's a good idea to create a final outline, which will show all the ideas in an easy-to-understand document. Creating an outline makes the entire writing process much easier and will save the author time.

Writing the first draft

After the outline is completed, the next step is to write the first draft. The goal is to write down ideas from the outline as quickly as possible. Setting aside blocks of one hour or
more, in a place free of distractions, will help the writer maintain a flow. Also, the writer should wait until the draft is complete to do any revising; stopping to revise at this stage will break the writer's flow. The writer should start with the section that is easiest for them, and write the summary only after the body is drafted.

The ABC (Abstract, Body, and Conclusion) format can be used when writing a first draft. The Abstract describes the subject to be written about, so that the reader knows what he or she is going to be told in the document. The Body is the majority of the paper, in which the topics are covered in depth. Lastly, the Conclusion section restates the main topics of the paper.

The ABC format can also be applied to individual paragraphs, beginning with a topic sentence that clearly states the paragraph's topic. This is followed by the topic, and finally, the paragraph closes with a concluding sentence.

Revising and editing

Once the initial draft is laid out, editing and revising can be done to fine-tune the draft into a final copy. Four tasks transform the early draft into its final form, suggested by Pfeiffer and Boogard:

Adjusting and reorganizing content

During this step, the draft is revisited to 1) focus or elaborate on certain topics which deserve more attention, 2) shorten other sections, and 3) shift around certain paragraphs, sentences, or entire topics.

Editing for style

Good style makes the writing more interesting, appealing, or readable. In general the personal writing style of the writer will not be evident in technical writing. Some changes are made by choice, not for correctness, and may include:

- shortening paragraphs
- rearranging paragraphs
- changing passive-voice sentences to an active voice
- shortening sentences
- defining terminology
- adding headings, lists, graphics

Technical writing is a discipline that usually requires a technical writer to make particular use of a style guide. These guides may relate to a specific project, product, company or brand and in general they ensure that technical writing is devoid of a personal style.

Editing for grammar
At this point, the document can be checked for grammatical errors, such as comma usage and common word confusions (for example, there/their/they're).

**Edit for context**

Determining the necessary amount of context is important. There needs to be a balance between exuberance, which may lead the audience to take unintended additional meaning from the text, and terseness, which may leave the audience unable to interpret meaning because of missing words.