Style Guide for Technical Communicators

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1. Ethics

By Alexander Fentress and Luis Berdecia

Ethics is an essential component of technical communication, and technical communicators have a responsibility to create content that is not only clear and concise but also ethical. In addition, the impact of their writing on their audience is significant, and they must ensure that they are presenting information in an honest and trustworthy manner.

Ethics is more than just avoiding plagiarism or following copyright laws. It is about ensuring that the information provided to the audience is accurate, relevant, and accessible to the audience. It is about being transparent about any conflicts of interest or biases that may influence the writing. Finally, it ensures the information is not misrepresented to manipulate their actions or decisions.

This chapter will help technical communicators make moral and responsible choices regarding their communication practices by offering guidelines and standards. Various ethical issues will be covered, including ethical principles, which emphasize the importance of speaking the truth and avoiding dishonesty in all communication, conflict of interest, and instances of scenarios in which it might occur, copyright and plagiarism, and accuracy and reliability.

This chapter will also concentrate heavily on the value of ethical communication methods in developing audiences' trust and credibility. Ultimately, the goal is to provide technical communicators with the information and resources they need to make moral decisions and uphold high ethical standards.

Ethical Principles

Technical communicators must uphold moral standards that guarantee truthfulness, openness, and consideration for their audience. Likewise, writers must convey information truthfully and objectively while adhering to the highest standards of ethical conduct.

Writers may think they will never encounter an unethical situation, but there will come a day when they will have to make a tough ethical decision. Ethical principles are more complicated than writers may think.

> Many ethical lapses that occur often begin with good intentions – for example, a manager or owner of a business may commit financial fraud to avoid laying off

> employees. The intention may be good, but breaching ethics results in a slippery slope – one that often leads to further and larger ethical breaches. (Beilfuss)

Writers may believe that failing to cite one source at the end of a report correctly will not impact them or the audience, but doing so increases the temptation to do the same with other sources in the future.

Technical communicators come up against many ethical issues and are responsible for making the right decisions on moving forward with the content they create. To achieve this, they should adhere to the following ethical principles:

- Truthfulness
- Objectivity and Impartiality
- Respect for Privacy and Confidentiality
- Legal and Ethical Compliance

Truthfulness

An essential ethical principle that all technical communicators should adhere to is truthfulness. They are responsible for being truthful in their communication practices by avoiding exaggeration and deception. A technical communicator should ensure that the information presented is honest, accurate, and trustworthy. In addition, they must be transparent about any biases that may influence their writing. Below are some tips on how to uphold truthfulness:

- Cite sources properly and give credit where it is due.
- Avoid plagiarism by correctly summarizing, paraphrasing, and citing information from other sources.
- Use accurate and reliable data to support claims and arguments.
- Be transparent about any biases that may influence the writing.
- Avoid using words that could be taken as insulting or exclusive.
- Be mindful and considerate of the various cultural and linguistic backgrounds of the audience.

Technical communicators should always be aware of their obligations under any laws, regulations, and codes of ethics and conduct for the profession. Furthermore, it is critical to keep in mind that moral failings can have serious repercussions for the writer, their organization,

and their audience. Here are some examples of how to appropriately apply the previous suggestions in various circumstances:

Examples of Ethical and Unethical Principles

Being Transparent

Below is a table outlining ethical and unethical practices in this area.

Ethical	Unethical
When a technical communicator has a financial or personal interest in the subject matter they are writing about, it is essential to disclose this information to the audience. **Example**: A writer might write, "I am an employee of XYZ Corporation, the company that developed the new product, and therefore have a financial interest in its success."	A technical communicator may fail to disclose their personal or financial interest in the subject matter, which could be perceived as bias. **Example**: A writer might write, "The new product is the best in the market and has no flaws."

Reliable Sources and Citing Properly

Below is a table outlining ethical and unethical practices in this area.

Ethical	Unethical
Using a reputable source like the Centers for Disease Control and Prevention (CDC) to provide information on vaccine safety in a report on immunization.	Using an unreliable source like a personal blog or forum to provide information on a scientific topic.
Citing a peer-reviewed journal article that supports a claim made in a research paper.	Failing to cite a source for information that was not originally produced by the writer.
Using a variety of sources to provide a balanced and comprehensive view of a topic.	Relying solely on one source or a biased source to support an argument.

By upholding high standards of truthfulness, technical communicators can build trust and credibility with their audience.

Objectivity and Impartiality

It is essential that technical communicators deliver information neutrally and objectively. While impartiality refers to treating all parties fairly and avoiding favoritism or discrimination, objectivity refers to presenting facts and information without bias or personal opinion. To remain objective, technical communicators should refrain from using emotional language or terminology that could be interpreted as prejudiced.

> **Example:** Technical writers should use more neutral terminology like "effective" or "ineffective" rather than using adjectives like "good" or "poor."

Writers must also refrain from employing words with substantial cultural or political implications, as these can influence readers' opinions and ideas.

Technical communicators must be impartial in their interactions with all parties by refraining from showing bias or discriminating against others based on their race, gender, ethnicity, religion, or sexual orientation.

> Most ethics violations in technical writing are (probably) unintentional, BUT they
>
> are still ethics violations. That means a technical writer must consciously identify
>
> his/her biases and check to see if a bias has influenced any presentation:
>
> whether in charts and graphs, or in discussions of the evidence, or in source use.
>
> (Gross)

Regardless of their sentiments or connections with the parties involved, writers must ensure that the material supplied is correct, relevant, and unbiased.

Technical communicators should strive to offer a neutral view on any problem, recognizing and addressing all relevant points of view to ensure objectivity. They should be mindful of the audience's variety in terms of language and culture and refrain from utilizing any terminology or imagery seen as derogatory or excluding. In addition, they should also be honest about any potential conflicts of interest that might affect their work. For instance, a writer should tell their readers if they are writing about a good or service that their business offers; this enables readers to evaluate the content in light of any potential prejudice or personal interests of the writer. Technical writers can ensure that their audience views their work as reliable and trustworthy by aiming for objectivity and impartiality, enhancing their credibility.

Respect for Privacy and Confidentiality

Respecting confidentiality and privacy is a key element of ethical principles. Technical communicators should protect any confidential material given to them and respect the privacy of their audience. The right of an individual to limit who can access and share their personal information is called privacy. For instance, they should be open and honest about how personal information will be utilized and kept if they are working on a project that calls for gathering personal information from people surveyed.

Sensitive information must be kept private and protected from disclosure of information. For example, technical communicators may have access to confidential information during their writing, such as proprietary information. They are responsible for ensuring that the information is kept confidential and only shared with authorized people.

To maintain privacy and confidentiality, technical communicators should:

- **Obtain informed consent.** By fully informing the individual how their information will be used and protected and that they have given explicit consent to that use.
- **Protect personal information.** Take precautions to protect personal data against unauthorized access or disclosure.
- **Obtain permission to use confidential information.** Seek permission from the relevant parties.
- **Avoid disclosing personal information.** Disclose only when necessary to achieve a legitimate communication goal. For example, suppose a writer is reporting on a public figure. In that case, they need to disclose certain personal information, but they should be mindful of the impact of that disclosure and avoid unnecessary disclosures.
- **Respect cultural and legal differences.** Be sensitive to cultural and legal differences regarding privacy and confidentiality. For instance, some cultures may have different expectations regarding the privacy of personal information, and some countries may have stricter data protection laws. Technical communicators should research and respect these differences when working with a global audience.

Here are some useful pointers on what to do and what not to do when it comes to protecting privacy and confidentiality:

Do	Do Not

Obtain consent from individuals before sharing their personal information unless there is a legal or ethical obligation to disclose it.	Use personal information for purposes other than those for which it was collected unless the individual has given consent.
Keep confidential information secure and only share it with individuals who have a need to know.	Disclose confidential information to unauthorized individuals or parties.
When possible, use anonymized or pseudonymized data to protect individuals' privacy.	Make assumptions about an individual's personal information based on their demographic characteristics, such as race or gender.
Follow relevant laws and regulations regarding the collection, use, and disclosure of personal information.	Share personal information without consent, except where legally or ethically required to do so.

Technical communicators can ensure they are upholding individuals' privacy and confidentiality while still doing their part to deliver accurate and pertinent information to their audience by taking note of the examples above.

Legal and Ethical Compliance

While creating and distributing content, technical communicators must be aware of and comply with all relevant legal and ethical standards. Failing to do so may result in legal liability, damage to reputation, and a loss of confidence and credibility among the audience. However, adhering to these ethical principles can ensure that their communication is honest, trustworthy, and respectful of their audience's needs and expectations.

Legal Compliance

Technical communicators must follow all current rules and regulations, including copyright, trademark, and patent restrictions. They must also obtain permission from copyright holders before using their work in their content. It is also essential that writers ensure that all trademarks and patents are correctly acknowledged and attributed while adhering to data protection and privacy laws by obtaining consent before collecting or using personal data and ensuring that personal data is securely stored and used only for the purposes for which it was collected.

Ethical Compliance

Technical communicators must also uphold high standards of ethical conduct in their work. They should avoid any actions that are unethical, like cooking data in which is, as Powell described "The practice of falsifying data" (Powell), and trimming data in which, Powell describes as "a method used to lessen the effect of statistical outliers on the results of a study" (Powell). Also, writers should avoid unethical actions like conflicts of interest, bias, and plagiarism.

To comply with ethical requirements, technical communicators should:

- Disclose any conflicts of interest that may affect the accuracy or objectivity of their content.
- Be aware of their own biases and take steps to ensure that they do not influence their work.
- Give proper citations when using the work of others to avoid plagiarism.
- Avoid using language or imagery perceived as offensive or exclusionary.

Complying with these legal and ethical requirements, technical communicators build trust with their audience and ensure that their content is both accurate and reliable.

Conflicts of Interest

Technical communicators should steer clear of conflict of interest. A technical communicator is said to be in a conflict of interest if they have conflicting commitments or loyalties that would make it difficult for them to behave in their audience's best interests. Conflicts of interest can occur in a variety of contexts, including academia, business, the government, and non-profit organizations. They can also take many different forms. Moreover, it might happen if a technical communicator is asked to write on a good, service, or issue in which they have a financial stake, or if they have a close connection to the subject or parties.

The consequences of having a conflict of interest can be significant, and can range from damaging the credibility and integrity of the technical communicator and their work, to compromising the safety, health, or well-being of the audience. It is therefore essential for technical communicators to be aware of the potential for conflicts of interest to arise and take steps to avoid or manage them effectively.

Importance of Disclosure

Disclosure is a critical aspect of managing conflicts of interest in technical communication. When a technical communicator has a potential or actual conflict of interest, disclosing it to their employer or client is an essential step in maintaining transparency and integrity.

Disclosing conflicts of interest helps to promote trust and credibility between the technical communicator and their audience. It allows the audience to assess the potential for bias or influence in the technical communicator's work and make informed decisions based on that information. It also demonstrates a commitment to transparency and ethical behavior, which can enhance the reputation and credibility of the technical communicator.

In addition to maintaining trust and credibility, disclosure can help to mitigate the risks associated with conflicts of interest. By identifying potential conflicts of interest early on, technical communicators and their employers or clients can take steps to manage them effectively. This may involve recusing oneself from a project or finding an impartial third party to complete the work, among other options.

Conflicts of interest disclosure may be required by law in addition to being a moral obligation. It is a requirement of many professional organizations' codes of conduct or ethical standards for members to report any conflicts of interest that might have an impact on their work. Similar to this, certain government regulations might call for the disclosure of conflicts of interest.

Examples of Conflict of Interest

It is helpful for technical communicators to understand what conflicts of interest look like in order to recognize them and manage them appropriately. Here are some examples of conflicts of interest that may arise:

Financial

Technical communicators may have financial conflicts of interest when they have a financial stake in the outcome of a project or are receiving payment from a third party with a vested interest in the project.

> **Example:** A technical communicator is paid by a pharmaceutical company to write a report on the safety and efficacy of a new drug may have a financial conflict of interest

Personal

Personal conflicts of interest arise when a technical communicator has a personal relationship with a party involved in the project, such as a family member or friend.

Example: A technical communicator who is asked to write a reference letter for a former colleague who they have a personal relationship with, which may affect the accuracy and impartiality of the letter.

Professional

Technical communicators may have professional conflicts of interest when they have a vested interest in the outcome of a project due to their professional relationships.

Example: A technical communicator who is a member of a professional association that is advocating for a particular position on an issue may have a professional conflict of interest.

Political

Technical communicators may have political conflicts of interest when they have a political affiliation or hold a political position that could influence their work on a project.

Example: A technical communicator who is a member of a political party that has a stance on a particular issue they are reporting on, which may affect their objectivity.

Intellectual

Technical communicators may have intellectual conflicts of interest when they have preconceived notions or biases that could influence their work on a project.

Example: A technical communicator who has strong opinions about a particular topic may have an intellectual conflict of interest that could influence their ability to provide impartial information.

Avoiding Conflicts of Interest

Maintaining integrity and credibility requires avoiding conflicts of interest. Technical communicators can utilize the techniques below to steer clear of conflicts of interest and ensure their work is fair, accurate, and unbiased.

- **Be aware of potential conflicts of interest.** Technical communicators should think carefully about any financial, professional, or personal ties that can affect their work or give the impression of bias. If there is any doubt, technical communicators should be on the side of caution and disclose the information.

- **Maintain objectivity.** Technical communicators should present information fairly and accurately without favoring one perspective over another. This can be challenging, especially when working on topics that are controversial. Technical communicators should make an effort to present a range of perspectives and viewpoints.
- **Recuse oneself.** Technical communicators should recuse if the conflict of interest is so significant that it could compromise their ability to provide impartial advice or information. Recusing oneself is a difficult decision, but it may be necessary to maintain the integrity of the work.
- **Seek an independent review.** Seeking an independent review of their work can provide many benefits. This can help to ensure that the work is objective and unbiased, even if the technical communicator has a personal or professional interest in the topic.

Copyright and Plagiarism

Plagiarism

In addressing the issues of copyright and plagiarism, it is vital that the technical communicator gives credit when borrowing someone's work. Plagiarism is defined as using another's work or ideas and passing them off as one's own. Beginning technical communicators need to be aware of what constitutes plagiarism to avoid it in their professional work. According to the college of Bowdoin, the four types of plagiarism include:

- **Direct:** The author's work is used word-for-word with no quotations or reference to the source. This is the most straightforward and obvious type of plagiarism
- **Self:** Commonly seen in academia, self plagiarism is the resubmitting of one's own work from a previous assignment without permission from the professor. For example, submitting a paper written in high school for a college English class would count as self plagiarism.
- **Mosaic:** More difficult to spot at first glance, mosaic plagiarism is rearranging the author's work so as to not look the exact same. This can include changing the structure, using synonyms, and borrowing phrases. This happens when the writer inadvertently plagiarizes, whether through misquoting, failing to use proper citations, or coincidentally using similar phrases to the original author. Even though it may not be done on purpose, the consequences are equivalent to any other form of plagiarism (Bowdoin).

To avoid plagiarism as best as possible, Tegan George recommends technical communicators should follow these guidelines:

- Always credit the original author both with in-text and references.
- Paraphrase and use quotations when pulling from text.
- Take note of the source when conducting research.
- Make sure to use a plagiarism checker before finally submitting the work.

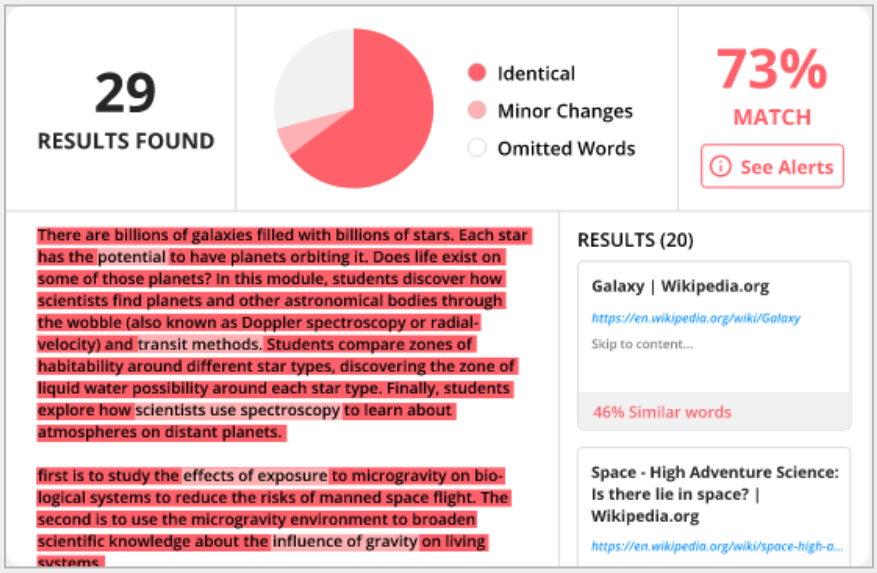


Figure 1. Plagiarism Checker
This image displays an example of someone's text, and how much of it compares to writing found on the internet. (Source: Quillbot. *Plagiarism Checker)*

Being aware of all forms of plagiarism helps writers build a reputation, avoid losing integrity, and helps the audience feel connected with the author.

Copyright

Another factor that technical communicators need to be aware of when writing is the rules and regulations behind copyright. By definition, copyright grants the owner(s) of a piece of work exclusive access to their content, known as their intellectual property. Different types of content. Both digital and physical, include:

- Literary works
- Musical works (including individual words and phrases)
- Dramatic works (live-action plays, scripts)

- Pictures, paintings, sculptures
- Motion pictures and videos
- Architecture and buildings

The use of someone else's work without express permission of the owner, is known as copyright infringement. For technical writers, it is vital to thoroughly examine any media that is not their own to determine if they can use it in their work. When working with clients, it is especially important not to violate copyright laws, as both the technical writer and the company as a whole can get into severe legal trouble as a result of not respecting the property. To protect oneself from accidentally infringing, it is necessary to include a notice of copyright within the work.

Going along with copyright regulations, technical communicators also need to be aware of Creative Commons (CC) licenses.These licenses specify whether or not the work can be borrowed, and to what degree. Limitations include:

- Ability to copy and publish
- Need to credit the author
- Use commercially
- Ability to modify the original
- Ability to change licenses

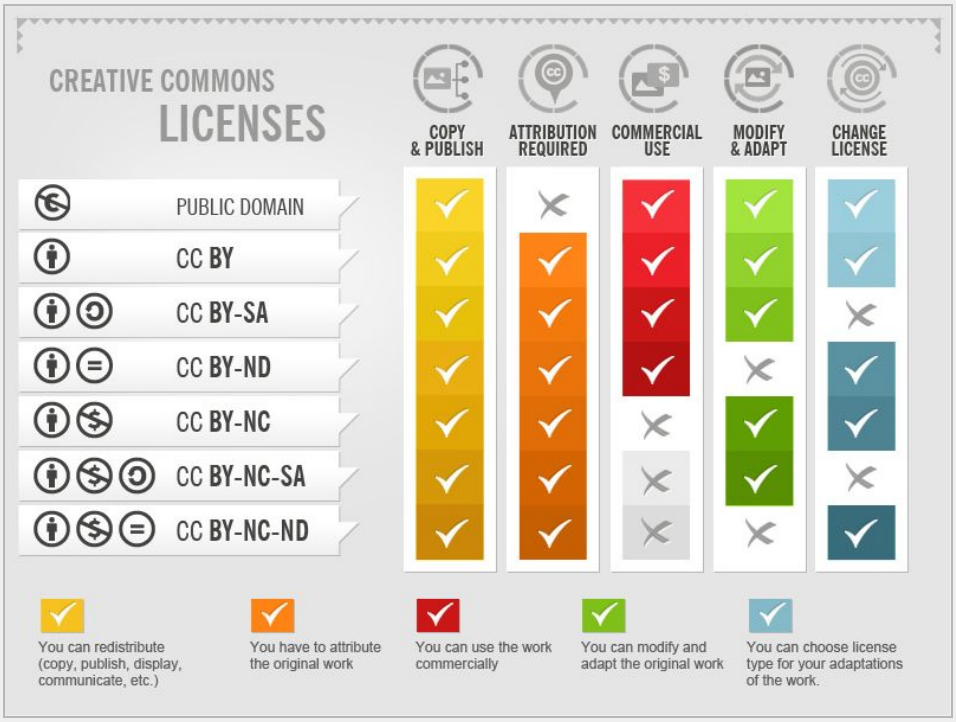


Figure 2. Creative Commons Licenses
These are the various types of CC Licenses available. (Source: Wageningen. *What are Creative Commons licenses?)*

Good technical writing involves being able to correctly borrow other people's work, being mindful of copyrights, and avoiding plagiarism as much as possible.

Accuracy and Reliability

When it comes to information released on the internet, it is vital that it is as accurate and factually correct as possible. Rather than immediately believing the first thing that they see, this section will teach technical writers to find reliability in their research. This section will advise technical writers on how to find evidence to back up their data, as well as where to find multiple sources for the topics they are writing about.

Accuracy

When dealing with any form of online writing, it is crucial for technical writers to be as accurate as possible. When writing for a client, this is especially important, as both the writer and the client's reputation is at stake when there is even the slightest bit of misinformation. Names, dates, statistics, and numbers should all be double checked to ensure that the information in the

document is the same as the source that it came from. According to Jefferson's PowerPoint on writing skills, helpful tips for proofreading include:

- Have an additional editor read over it.
- Use the delay approach (reading it over, waiting, then reading it over again).
- Read the text line by line.
- Break up long words into syllables.

While spell-checkers are useful tools for a baseline, they aren't the end all be all for grammar and spelling. Spell-checkers vary from application to application, so it is not completely fail-safe to rely on one to do all of the proofreading.

Reliability

Concerning technical writing, reliability is just as important as accuracy, if not more so. Before just pulling from the first website that the writer discovers, it is necessary to examine the source to determine if it is reliable. Some important questions to ask to determine the sources are as follows, according to the University of Washington:

- Who wrote it?
- What is the purpose?
- Where is it from?
- Why does it exist?
- How does this source compare to others?

It is the technical writer's duty to learn what makes a good source, where to find it, and how to correctly use it.

Conclusion

Ethics is the framework that technical communicators use to create a strong, trusting relationship with the audience. It requires accuracy, attention to detail, respect to privacy, and the ability to be as clear and concise as they can be in giving information to the reader. Being able to build a strong ethical code will enable the technical writer to adapt to many different topics of writing, regardless of the material. After reading through the contents of this chapter, technical communicators will be able to get an idea of what constitutes good ethics, and will start to form their own code of ethics in their writing.

2. Accessibility

By Bianca Bundy and Zachary Hill

Accessibility is the process of making a document as useful as possible by as many groups as possible. People typically think that accessibility only applies to accommodating people with disabilities. While accommodating those with disabilities is important, accessibility also promotes usability through technical challenges, such as slow internet connections or outdated browsers, and situational challenges, such as loud environments or language barriers.

Accessibility is important for technical communicators to consider when creating a document because it is required by law in the United States of America and ensures that all users have an equal opportunity to read and understand the information being shared.

Understanding Accessibility

To understand accessibility, one must understand common disabilities and how they affect the way people use and understand information. This section will describe the four main categories of disabilities which includes visual impairments, hearing impairments, mobility impairments, and cognitive impairments, and what a technical communicator should consider to accommodate them.

Visual Impairments

Visual impairments are any loss of vision that cannot be corrected with the help of glasses or contact lenses. Some common visual impairments include:

- Blindness
- Low vision
- Color blindness
- Blurred vision
- Light sensitivity

Visual impairments impact over 2.6 billion people around the world and over 7 million people in the United States of America are reported to have visual impairments.

Some people who have visual impairments choose to use programs that have strong zoom capabilities or screen readers to help them navigate online documents. Screen readers are software programs that read text on a screen aloud to the user. Screen readers become the communicators between online documents and users. Technical communicators must write clearly and specifically to ensure that people with visual impairments can understand the information that they need.

Visual elements, such as tables, charts, and lists are all elements that must be considered when writing accessible documents for people with visual impairments because they are often inaccessible to people who use screen readers. As a general rule, visual elements should summarize or restate information that is already included elsewhere in a document — do not introduce new, important information in a visual element.

Accessible color contrasts and fonts are necessary for a document to be legible for people with visual impairments. For more information, refer to the Visual Communication chapter.

Hearing Impairments

Hearing impairments are when a person cannot hear sounds that are 20 decibels or lower. Hearing impairments include any hearing disorders that are caused from inner-ear damage or outer-ear damage. Common hearing impairments include:

- Deafness
- Low Hearing
- Tinnitus
- Ruptured eardrums
- Ringing in ears

Over 1.5 billion people around the world and over 26 million adults in the United States of America have some form of hearing impairment.

People with hearing impairments may have a hard time hearing audio in a document. Types of audio in a document can include videos, sound bites, music, and podcasts. Technical communicators should add closed captions to videos and provide transcripts for other audio files to guarantee audio elements of a document are accessible to people with all levels of hearing.

Mobility Impairments

Mobility impairments refer to any form of disability that limits the function of fine motor skills or movement of a person's limbs. Mobility impairments can be caused by physical, neurological, or genetic disorders. Common mobility impairments include:

- Tremors
- Arthritis
- Amputations
- Paralysis
- Broken bones

Around 1 in 4 adults in the United States of America have at least one mobility impairment. People with mobility impairments may have a hard time using a computer keyboard, mouse or mobile device. Small interactive elements of a document, such as a button, link, or icon, can be hard for people with mobility issues to access on a mobile device. Technical communicators must consider keyboard accessibility, tab ordering, and navigation shortcuts to make information accessible for people with mobility impairments.

Cognitive Impairments

Cognitive impairments are when a person has trouble remembering, learning, concentrating, or making decisions that affect their everyday life. Cognitive impairments include mental health, learning, and auditory processing disorders. Common cognitive impairments include:

- Depression
- Anxiety
- Dementia
- Post-Traumatic Stress Disorder
- Dyslexia
- Attention Deficit/Hyperactivity Disorder (ADHD)

Cognitive impairments impact 58.2 million people in the United States of America. People with cognitive impairments may require a broad range of accommodations depending on the severity and nature of their symptoms. Best accessibility practices for people with cognitive disabilities include:

- Using plain language
- Creating consistent document layouts
- Getting rid of distractions such as advertisements or pop-ups
- Making the main point of each topic clear

Levels of Longevity

Disabilities are categorized into three levels of longevity that describe the length of time the person has the disability. The categories are permanent, temporary, or situational.

- **Situational:** A person has a situational disability when they are in a setting that restricts their vision, hearing, mobility, or cognition. For example, trying to hear a video while in a crowded environment.
- **Temporary:** A person has a temporary disability when their visual, hearing, mobility, or cognitive impairment affects them for a short period of time. For example, a broken bone. People with temporary disabilities will often be able to make a full recovery within a year.
- **Permanent:** A person has a permanent disability when their visual, hearing, mobility, or cognitive impairments affect them for an indefinite amount of time or for the rest of their life. For example, an amputation.

Summary of Common Disabilities

Summary of Common Disabilities			
Type of Disability	Examples of Disability	Amount of U.S.A Population Affected	Types of Accommodations
Visual Impairments	Blindness Low vision Color blindness Blurred vision Light sensitivity	7 million people	Write clearly Write specifically Color contrasts Fonts
Hearing Impairments	Deafness Low hearing Tinnitus	26 million people	Captions for videos Transcripts for audios

	Ruptured eardrums Ringing in ears		
Mobility Impairments	Tremors Arthritis Amputations Paralysis Broken bones	61 million people	Keyboard accessibility Tab ordering Navigation shortcuts
Cognitive Impairments	Depression Anxiety Dementia PTSD Dyslexia ADHD	58.2 million people	Plain language Consistent layouts No distractions Clear main points

Accessibility Standards

Discrimination against people with disabilities has been outlawed in the United States of America since the passing of the Americans with Disabilities Act (ADA) on July 19,1990. Accessibility on the web has been standardized since May 5, 1999 with the introduction of the Web Content Accessibility Guidelines, a comprehensive resource that provides accessibility standards for websites created by the World Wide Web Consortium. This section explains what the Americans with Disabilities Act and the Web Content Accessibility Guidelines are, how they enforce accessibility in online formats, and why technical communicators should understand them thoroughly.

Web Accessibility Content Guidelines

The Web Content Accessibility Guidelines (WCAG) is a comprehensive resource that compiles accessibility standards under fourteen guidelines. The guidelines are as follows:

- Provide equivalent alternatives to auditory and visual content.
- Don’t rely on color alone.
- Use markup and style sheets and do so properly.
- Clarify natural language usage.
- Create tables that transform gracefully.
- Ensure that pages featuring new technologies transform gracefully.

- Ensure user control of time-sensitive content changes.
- Ensure direct accessibility of embedded user interfaces.
- Design for device-independence.
- Use interim solutions.
- Use W3C technologies and guidelines.
- Provide context and orientation information.
- Provide clear navigation mechanisms.
- Ensure that documents are clear and simple.

The WCAG also features “success criteria”. Success criteria are short descriptions of what successful accessibility elements of a document should look like. There are seventy-eight total success criteria in the WCAG. Each success criteria has a list of sufficient techniques that provide examples of ways that technical communicators can make their information successfully accessible. For example, the WCAG details success criteria 1.2.4 Captions (Live) requires that, “Captions are provided for all live audio content in synchronized media” (Web Content Accessibility Guidelines). The WCAG also suggests sufficient technique G9: Creating captions for live synchronized media presents the example of, “a television studio uses a real-time captioning service to create captions for its evening news online” (Web Content Accessibility Guidelines). The success criterion outlines a requirement for a document, and the sufficient techniques gives an example of the criterion.

Although the WCAG is not an introduction to accessibility on the web, it details specific information about the requirements on how to make a website as accessible as possible. When applicable, each topic under the “Writing for Accessibility” heading in this chapter will include examples of success criteria that relates to the subject matter. Technical communicators should read through each success criterion and develop a thorough understanding of how to create an accessible document by meeting the guidelines.

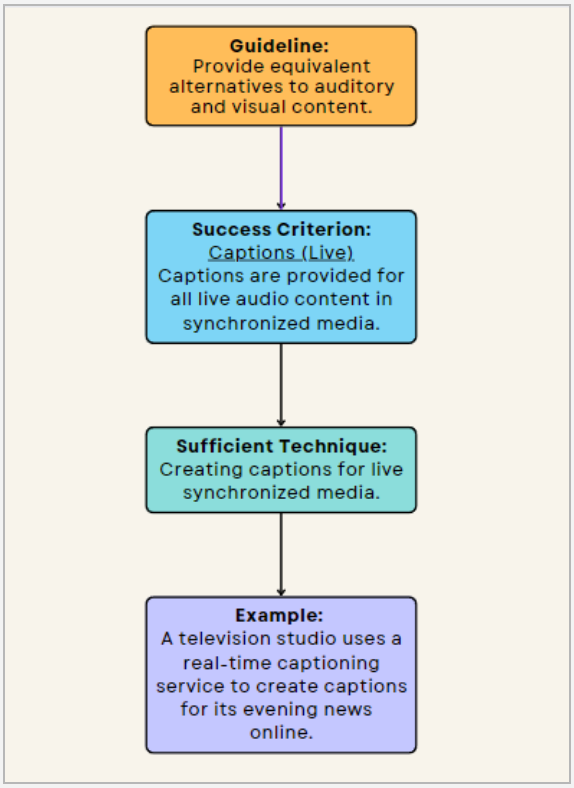


Figure 1. Flowchart of the Web Content Accessibility Guidelines
This flowchart shows the hierarchy of information in the Web Content Accessibility Guidelines. The hierarchy is as follows: guideline, success criterion, sufficient technique, and example. (Source:)

Americans with Disabilities Act

The Americans with Disabilities Act is a United States federal law that prohibits the discrimination of people with disabilities in terms of employment, transportation, communication, and several other areas. The ADA does not mention web accessibility by name in its description, but the Department of Justice has advocated for Title III of the ADA to include web accessibility.

Title III of the ADA, “prohibits discrimination against people with disabilities open to the public" (Thompson Reuters). The Department of Justice has been involved in legal cases that used Title III as a justification for websites to be accessible to people with disabilities. For example, in 2018 the Department of Justice reached an agreement with Teachers Test Prep, Inc. to revise their website to be more accessible. Teachers Test Prep, Inc. is a company that provides preparation courses for teaching licenses in California. The company had been reported for not providing closed captions on tutoring videos for students with hearing impairments. Thus, individuals with hearing impairments were denied equal access to the Teachers Test Prep Inc.

course materials. The Department of Justice examined the complaints and cited the lack of closed captions as a violation of Title III of the ADA. Teachers Test Prep, Inc. had to caption all of their online content, add extra course modifications for people with hearing impairments, and provide ADA compliance training to its staff.

Though the ADA does not specify web accessibility in its standards, it is still important for technical communicators to understand the federal law and how it can be used to justify and enforce web accessibility.

Ethical Responsibility of Technical Communicators

The online space has become an important function in daily life with the increasing reliance on technology, such as computers and mobile devices. When a website or online document is inaccessible, it means that people with disabilities do not have an equal opportunity to access information, services, or programs that have shifted to an online format. It is unethical for technical communicators to not consider people with disabilities when creating a document because it means they are actively preventing people from accessing such information, services, or programs online. Technical communicators are responsible for understanding how different disabilities may affect a person's ability to use and understand a document, as well as how to design accessible accommodations.

Creating an accessible document ensures that every person has an equal opportunity to read, understand, and use its contents.

Writing for Accessibility

Technical communicators must be aware of elements of a written document that may be difficult to read or understand by people with disabilities. In addition, some types of language can prevent disabled people from accessing information. Technical communicators must recognize that the way they write can easily become inaccessible if they do not write carefully. This section will first explain what kinds of language and elements of a document technical communicators should include in their documents. After, it will explain what kind of language and elements of a document to avoid.

Using Simple Language

Simple language, also called plain language, is a form of writing where the author writes as clearly and concisely as possible, without excessive thoughts or descriptions. According to the Plain Language Action and Information Network, simple language helps users "find what they need, understand what they find, and use what they find to meet their needs" (Plain Language Action and Information Network). In terms of accessibility, simple language helps reduce distractions to people that may have cognitive impairments that affect their literacy skills or

attention spans. It also benefits people who use screen readers because it allows them to quickly scan over the content to find what they need.

Some common ways for technical communicators to incorporate simple language into their writing is by using:

- “You” when referring to the reader
- Active voice
- Short sentences
- Short paragraphs
- Common words

Some common things to avoid when trying to achieve simple language are using:

- Passive voice
- Long sentences
- Long paragraphs
- Idioms
- Jargon or complex words when there is a simpler way to word them
- Overly descriptive language that take away from the main point of the document

If avoiding complex language or jargon in a document is not possible, the WCAG provides sufficient technique G101 for two types of situations: “if the word or phrase has a unique meaning within the Web page” or, “if the word or phrase means different things within the same web page” (Web Content Accessibility Guidelines). If the word or phrase has a unique meaning within a web page, it means that the word or phrase has multiple meanings in a dictionary, but only one definition is needed to understand the content of a text. It can also mean that the author of the text created a new definition for a word or phrase that is needed to understand the content of a text. The WCAG suggests hyperlinking a definition to the word or phrase, or adding an inline definition to the sentence with the word or phrase.

Below are examples of three ways to improve the sentence “Efficient bandwidth can become expensive because of the infrastructure used to support it” using three different methods. The first example revises the sentence using simple language only. The second example revises the sentence using simple language and a hyperlink to a definition. The third example revises the sentence using simple language and an inline definition.

Method	Example
Simple Language	Bandwidth that works well can cost a lot of money because of how many parts are needed to make the system work.
Simple Language and a Hyperlink	Bandwidth that works well can cost a lot of money because of how many parts are needed to make the system work.
Simple Language and an Inline Definition	Bandwidth (the maximum amount of information that you can receive from the Internet every second) that works well can cost a lot of money because of how many parts are needed to make the system work.

In this situation, the term bandwidth has multiple meanings, but only one definition applies in this context. Also, bandwidth is a complex term that cannot be explained in simpler terms. Therefore, the term needs to be defined within the text to ensure that the information presented is accessible to all people.

If an online document contains many complex words and phrases that cannot be written in simpler terms, technical communicators should consider adding a document-specific glossary at the end of their documents. This way, technical communicators can hyperlink definitions to the glossary to direct the users quickly to the exact definition that is being used for a word or phrase in the context of the text.

Using Mindful Language

Technical communicators must be aware that some language can be offensive or dehumanizing to people with disabilities, and they must take special care and consideration to be intentional with their writing to not potentially offend someone. This section will talk about the debate between person-first language versus identity-first language and how to avoid violent or dehumanizing language.

Person-First Language and Identity-First Language

Person-first language is language that places the individual before their disability. Person-first language emphasizes personhood and is intended to reduce stigma against disabilities. For example, a person-first description is, “a person who is blind.” Identity-first language is language that places the disability before the individual. Identity-first language is intended to emphasize that disabilities are not something to be ashamed of and to show that disabilities can be a source of a person’s identity. For example, an identity-first description is, “a blind person.”

Both identity-first language and person-first language are used to describe people with disabilities, but there is debate within communities about which type of language to use. According to the University of Kansas, some disabled individuals do not like person-first language because it "separates the disability from a person's value or worth, suggesting that the disability is inherently negative" (Monica Simonsen and Cynthia Mruczek). On the other hand, the University of Kansas explains that some individuals have a difficult time being comfortable with identity-first language because it is related to the person's, "stage of disability identity development, which may be impacted by a number of personal, cultural, economic, family, and disability factors" (Monica Simonsen and Cynthia Mruczeck).

People have different preferences on which type of language they feel more comfortable with, so it is always good practice to ask what a person prefers. For larger documents that are not specific to one person, the University of Kansas suggests alternating between both person-first language and identity-first language. Below is a table that shows person-first language and identity-first language versions of disabilities.

Person-First and Identity-First Language	
Person-First Language	**Identity-First Language**
A person with a disability	A disabled person
A person who is deaf or hard of hearing	A deaf or hard of hearing person
A person who is blind or who has a visual impairment	A blind person
A person who uses a wheelchair	A wheelchair user
A person who has paralysis	A paralyzed person
A person on the autistic spectrum	An autistic person
A person with neurodivergence	A neurodivergent person

Avoiding Violent and Dehumanizing Language

Violent and dehumanizing language can cause unnecessary stress or stigma toward people with disabilities. Technical communicators should be sensitive to this kind of language to ensure that they are being as inclusive as possible and that they are not perpetuating any oppressive language toward people who have disabilities.

Violent language is commonly used in English figurative language and may not be intended to suggest violence, but can easily be misinterpreted. Avoiding the use of violent words and phrases can prevent unintentional harm to people with cognitive impairments, such as post-traumatic stress disorder or depression, as well as people that might have mobility impairments due to violent situations. The table following this paragraph has common English phrases that include violent language, and suggestions on phrases to use instead.

How to Avoid Violent Language	
Do	**Do Not**
Wasting time	Killing time
Good luck	Break a leg
White tank top or undershirt	Wife beater
Passenger seat	Riding shotgun
Try it	Take a stab at it

Dehumanizing language is any language that denies a person their humanity or perpetuates oppression or stigma toward disabled people. This can include words that have been used previously to enforce stigma against people with disabilities, such as “crazy” or “insane” to describe something unexpected. It can also include words that suggest that disabilities are not natural or something to be ashamed of, such as “suffering from hearing loss” or “wheelchair-bound.” The table below has common words or phrases that can be potentially harmful to disabled communities, and suggestions on what to write instead.

How to Avoid Dehumanizing Language	
Do	**Do Not**
Unexpected	Insane or Crazy
Test assumptions to ensure they are correct	Sanity Check
Nondisabled person, hearing person, neurotypical person	Normal (when talking about a person)

A person with a physical disability.	Deformed or disfigured
A wheelchair user	Wheelchair-bound

Using Descriptive Headings

Headings are short descriptions before a block of text that give the reader an idea about what the text is going to be about. Headers organize a page into smaller sections that can make a document easier to read. Writing descriptive headings can help people with cognitive disabilities that affect attention span as well as people with visual impairments who use screen readers. People with mobility impairments may choose to use assistive technology, such as tab ordering on a keyboard, to move between headings. Screen readers and assistive technology have the mechanics to move around a page to find information quickly so headings should provide a brief yet detailed description of the content it precedes.

There are three types of headings:

- **Topic Headings:** Headings that usually have one or a few words that say what the section will be about. For example, “Grammar” is a topic heading. Topic headings are usually too short and vague to be accessible.
- **Statement Headings**: Headings that prompt the user to pursue an action. For example, “Using correct grammar” is a statement heading. Statement headings are a good choice for accessible documents because they are specific and center the user around an action.
- **Question Headings:** Headings that are questions that the user might have. The text below the heading answers the question. For example, “Why is proper grammar important?” is a question heading. Question headings are a good choice for accessible documents because it helps users scan documents and find answers to questions that they have quickly.

Technical communicators should carefully consider which types of headings are the best for their target audience. If a document deals with a significantly complex topic, then a technical communicator might choose question headings for their document. If a document is less complex, then a technical communicator might choose statement headings for their document. Because topic headings are the least descriptive, technical communicators should use them the least.

The WCAG provides sufficient technique G130: Providing descriptive headings to describe the purpose of descriptive headings in detail. According to the WCAG, the purpose of descriptive headings is to “help users find specific content and orient themselves within the Web page”

(WCAG). To achieve this, technical communicators should consider writing the most important information at the beginning of the heading, and writing the less important or repetitive information at the end.

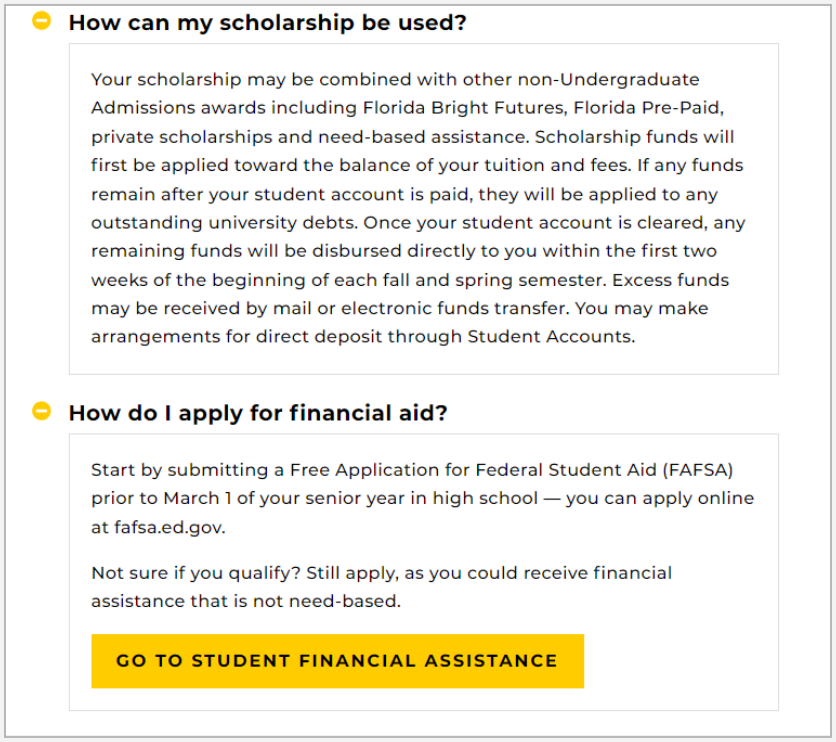


Figure 2. University of Central Florida's Frequently Asked Questions Page
This image shows how the University of Central Florida structures their frequently asked questions page with question headings. This helps students that use and do not use assistive technology to locate the answers to the questions that they have quickly. (Source: University of Central Florida, Cost, Fees, and Financial Aid)

Avoiding Visual Cues and Directional Language

Visual cues are any visual elements of a document design that is used to emphasize or mark a part of a process. Some examples of visual cues include:

- Arrows pointing to the next step in a process.
- A "yes" button being green and a "no" button being red.
- A more expensive payment plan button being bigger than a less expensive payment plan.

Directional language is any language referencing the layout of a document. Some examples of directional language include:

- “To the right of the start button…”
- “Under this paragraph...”
- “Next to the column...”

Visual cues and directional language are not issues themselves in technical writing, but relying on them as the only indicator of an element or a step in the process can be inaccessible. Relying only on visual cues can restrict screen reader users or colorblind persons from using a document successfully. Directional language can pose a similar issue because people who use screen readers do not always have a frame of reference for what a page looks like.

The WCAG offers sufficient technique G96: Providing textual identification of items that otherwise rely only on sensory information to be understood as a way to use visual cues or directional language while still being accessible. The WCAG states that the intent of this sufficient technique is to “ensure that items within a Web page are referenced in the content not only by shape, size, sound or location, but also in ways that do not depend on that sensory perception” (Web Content Accessibility Guidelines). In other words, if technical communicators are going to use visual cues or directional language in a document, they must make sure that it is supplemented with textual clues.

Example: A technical communicator is writing instructions on how to use an ecommerce website. A rectangular button is used to submit a payment for an order. The button has the word “pay now” written on it.

- **Do write:** “To pay for your order, click the rectangular button labeled “pay now.” This incorporates a visual cue (rectangular button) and a textual cue (“pay now”). A person who uses a screen reader can scan the website for the “pay now” text.
- **Do not write:** “To pay for your order, click the rectangular button at the bottom of the screen.” This uses both a visual cue and directional language to describe what the button looks like and where the button is on the screen. This is inaccessible to screen readers.

Technical communicators must avoid relying only on visual cues or directional language when writing a document. To ensure that a document is accessible to screen readers, technical communicators should perform user tests. For more information on user testing for accessibility, please refer to the Guidelines for User Testing section of this chapter.

Avoiding Abbreviations, Acronyms, and Initialisms

Abbreviations are a shortened form of a word or phrase. Acronyms are abbreviations formed from the first letter of each word and are pronounced as one word, such as NASA (National Aeronautics and Space Administration). Initialisms are abbreviations formed from the first letter of each word with each letter pronounced separately, such as CPU (central processing unit).

Acronyms, abbreviations, and initialisms can be hard to understand for people with disabilities if they are not properly defined within the text of a document. Screen readers often have difficulties reading acronyms and initialisms, which makes understanding information difficult for people with visual impairments. Using too many abbreviations can cause unnecessary distractions for people who have cognitive impairments.

Technical writers can provide two definitions of abbreviations:

- An expansion is the full word or phrase that is being shortened. For example, an expansion of CVS would be Customer Value Stores.
- An explanation is a description of the abbreviation. For example, CVS is a chain of stores that sells general merchandise, groceries, and pharmaceutical items.

Guideline 3.1.4 Abbreviations in the WCAG offers sufficient technique G102: Providing the expansion or explanation of an abbreviation as a way to make abbreviations more accessible. The technique offers five situations of abbreviations and how they can be properly defined within a text:

1. Abbreviations with more than one meaning must include an expansion according to the context of the text. For example, AP could stand for “advanced placement,” “accounts payable,” or “access point,” depending on the context. Only the expansion for the correct context should be provided.
2. Avoid using Latin abbreviations. For example, use “for example” instead of “e.g.” (exempli gratia) in a sentence.
3. Abbreviations that borrow words from foreign languages only need an explanation of the abbreviation. It does not need the expansion of the abbreviation. For example, ABS is a borrowed acronym from German that means “antiblockiersystem.” In this case, the explanation should be “anti-lock brakes,” the English explanation of the German word.
4. Acronyms that have no expansions should include an explanation.
5. Abbreviations that have become common language do not need an expansion. For example, “o’clock” comes from the expansion, “of the clock.” Since “o’clock” is most

commonly used and understood by English speakers, no expansion or explanation needs to be given.

In summary, if there is no expanded form of an abbreviation, or if the expanded form is in a foreign language, an explanation is given. Any other situation should have an expanded form of the abbreviation in the text.

Avoiding Foreign Phrases and Idioms

Technical communicators should avoid using foreign phrases when writing a document because it makes the document difficult to understand and can become distracting to people with cognitive disabilities. When possible, technical communicators should use English words to describe an idea instead of the foreign language equivalent. Below is a non-exhaustive table of common foreign phrases to avoid and what to write instead.

How to Avoid Foreign Phrases	
Do	**Do Not**
Around	Crica
As such	Per se
Move	Segue
Together	En masse
Nothing	Nada

Similarly, technical communicators should avoid using idioms when writing a document because they can make information confusing if the user does not understand the idiom. Below is a non-exhaustive table of common idioms to avoid and what to write instead.

How to Avoid Idioms	
Do	**Do Not**
Reveal a secret	Spill the beans
Undecided	Up in the air

Willing to listen	All ears
Enjoy yourself	Let your hair down
Different from	Far cry from

The WCAG suggests the sufficient technique G101: Providing the definition of a word or phrase used in an unusual or restricted way to present an alternative resolution to foreign phrases and idioms. If the foreign phrase or idiom is not understood by every person that reads it but is necessary to keep in the context of the text, technical communicators must provide a definition of the word or phrase. Technical communicators can either insert a hyperlink to a definition or write an inline definition in the text.

A hyperlink to a definition can be written like this:

- People experience deja vu most often when they are younger.

An inline definition can be written like this:

- People experience deja vu most often when they are younger (deja vu is the feeling that one has seen or heard something before).

Designing for Accessibility

When designing for accessibility, technical communicators should adopt an inclusive mentality - not only for writing, but also for the design around writing. This accessible design, also known as user-experience (UX) design, focuses on formatting written communication to be compatible with most technologies, inputs, and navigation.

Some audiences may only be able to navigate using a keyboard or touchscreen device. Therefore, technical communicators should format headings and navigational shortcuts in a way that allows these users to properly access their work.

Principles of Accessible Design

Below are the three principles of accessible design in technical communication.

Inclusivity

The first principle of accessible design for technical communication is to design with an inclusive mentality. It is important to value the diversity of experiences and abilities of readers when formatting one's writing. Designing for progressive enhancement is one way to achieve

this inclusive mentality. This means ensuring that everyone can read or interact with a document using the most basic technologies first. Once this is achieved, the document can be iterated to improve the user experience.

Example: A set of navigation instructions state, “Use the dropdown list on the left side of the document, 'Chapter,' to navigate to the desired section.” This description provides both the location and guidance to the desired chapter.

Assistive Technology

The next principle is to design for compatibility with assistive technology. Assistive technology includes screen readers, speech input, screen magnifiers, and mobile devices. To design with this in mind, a technical communicator must first understand how the tools work, after which they can avoid common errors that can break assistive technology. These errors include images or navigation that trap the keyboard and inconsistent page numbering.

To help with assistive technology like screen readers, images should be standardized to have 14pt text and alt text. Pages should also be able to be navigated using only a keyboard, as this resolves most issues with assistive technology.

Example: A woman uses assistive technology to navigate headings in a document, using voice input to move between headings and Windows Narrator to read the text. She then turns to her mobile device and easily navigates to the section or page number where she left off.

Navigation

The final principle of accessible design for technical communication is ease of navigation. As mentioned previously, readers should be able to navigate with any of their possible peripherals or input methods. This can be achieved through the use of tabs, headings, or navigation shortcuts. At a minimum, users should be able to navigate through all information and pages using only a keyboard.

Example: A user navigates through a PDF using built-in heading and subheading navigation. They create a bookmark in the PDF to mark where they left off so that they can quickly return.

Designing Non-Written Content

When designing non-written content, such as images, it is important to follow established standards to ensure accessibility. For images, technical communicators should keep decorative

images free of text that might be accidentally detected and read by text readers. They should also avoid placing text or hidden hyperlinks over these images so that screen readers, such as Windows Narrator, do not accidentally capture them and confuse users.

When implementing images that have a meaning, include an alt text or description of less than 250 characters that is properly formatted for navigation and screen readers. This alt text should not describe the image but rather convey its purpose. If an image includes any text, either in or over the image, format the text in at least 14pt font with good contrast.

Example: A user using a screen reader reads the text displayed on an informative image which is then followed by the description text and skips over the decorative images unless there is a description formatted for the image. The user's screen reader properly navigates to the image after text and doesn't get input trapped within the image.

Guidelines for User Testing

User Testing for Accessibility

User testing is critical to understanding whether a technical communication medium is truly accessible. This method can be used to identify accessibility issues and shortcomings in the work. By testing the document with a variety of users, it is also possible to understand what will help end users achieve their goals.

Whenever possible, user testing should include users with a variety of peripherals or disabilities to best ensure the test best addresses the accessibility issues of the end users. Other recommendations of user testing for accessibility are paraphrasing, plus-minus testing, and testing users with a task-based test. These methods are described below.

Paraphrase Testing

Paraphrase testing focuses on analyzing the user's understanding of a document or piece of writing. This test asks users to read through the entire document or specific sections and then paraphrase, in their own words, what they understood. This helps to gauge what readers are taking away from the content. Based on the user's understanding of the document through their paraphrase, changes can be made to the document's content structure, readability, and content quality.

Example: After reading the Accessibility chapter of this style guide, a test subject summarizes it to the best of their ability, while the testers take notes on what material they understood and what they missed.

Plus-Minus Testing

In the plus-minus testing method, created by Menno de Jong and Peter Jan Schellen, readers go through a document or specific sections and make recommendations on what content should be added or removed. These recommendations, which can be as detailed as the test requires, ranging from near-editor level to simple suggestions for wording. With the user's feedback, valuable improvements can be made to the document or writing.

> **Example:** After reading a document, a test subject suggests removing the focus section because they feel it is covered in other sections. In its place, they propose a list of key subjects or elements on which the document focuses.

Task-Based Testing

Task-based testing asks users to identify specific information in a document or writing and explain their understanding of it. This is similar to paraphrase testing, but it targets key points while also testing the navigational quality of the entire work.

For example, if users are taking longer than expected to find information, improvements should be made to readability and navigation. Conversely, if users are able to find information in a reasonable amount of time but do not understand it, improvements should be made to the content structure, quality, and readability.

> **Example:** After reading a document and taking an hour break, a test subject is asked to locate and explain one section. Using heading navigation, the subject navigates the 100-page document in 20 seconds and summarizes the section. Testers can use this to determine if the time taken and paraphrasing are appropriate for the information they wanted to convey.

Conclusion

Accessibility in technical communication is the process of making a document usable to as many people as possible. To create an accessible document for technical communication, technical communicators must understand what accessibility in documentation is. This starts with identifying the common disabilities readers can have as well as the longevity that they can come with. As mentioned in the understanding accessibility section, some of the most common disabilities found in technical communication are visual, hearing, mobility, and cognitive impairments. To help with these impairments, there are established standards for accessibility, such as accessible color contrasts, assistive technology compatibility, consistency, and closed captions. To understand the standards for accessibility, there are detailed guidelines that help technical communicators find improvements to their work.

To ensure that readers have an equal opportunity to read and understand information, standards and guidelines such as the Web Content Accessibility guidelines (WCAG) and Americans with Disabilities Act (ADA) were created. The WCAG consists of 14 key guidelines that act as a checklist for verifying that web content is accessible and contains success criteria to help understand what correct accessibility elements should look like. On the other hand, while the ADA does not specifically include web accessibility in its standards, it is a legal prohibition of discrimination of people with disabilities. The ADA acts as enforcement and justification for ensuring technical documentation remains accessible.

Technical communicators should follow certain guidelines to make writing accessible. For example, simple language consists of using active voice, common word usage, short paragraphs, and referring to the reader as “you". It is also important to use mindful language that doesn’t offend or dehumanize any of the readers. This can be achieved through person-first and identify-first language as well as avoiding violent or dehumanizing phrases and words. In addition, technical communicators should avoid using visual cues and directional language as the only descriptor, abbreviations without an expansion or explanation, and foreign phrases that are not widely used.

To ensure that a document is accessible, technical communicators can conduct tests through user testing and self testing. Testing various types of assistive technology such as screen readers or navigational shortcuts is one way to verify that a document has adhered to the accessibility standards. Performing user tests, such as paraphrase or task-based user testing, is a way to verify that a reader sample group also finds your work accessible.

In summary, creating technical communication that is accessible is an essential way of promoting inclusivity and ensuring that everyone has an equal opportunity to learn and access the information. It is also crucial that technical communicators understand that once they are made aware of what makes a document accessible, it is unethical to avoid implementing and following accessibility guidelines. Refusing to make a document accessible discriminates against people that have disabilities.

3. Grammar and Punctuation

By Amelia Frederick and Jenna Luna

Grammar is “the characteristic system of inflection and syntax of a language” (Grammar Definition & Meaning). In other words, grammar is the set of standards governing language and how words function based on their placement, inflection, and combination with other words to create sentences. Punctuation is “the act or practice of inserting standardized marks or signs in written matter to clarify the meaning and separate structural units” (Grammar Definition & Meaning). These symbols affect tone and clarify meaning in writing, just as pitch, volume, and pauses do in speaking.

Grammar and punctuation are the necessary tools for constructing any written sentence. By understanding these tools and how they function, a writer of technical prose can ensure the information they convey is received by the audience the way it was intended. A document that contains poor grammar, misspellings, and errors in punctuation can make the writer appear unprofessional and uneducated, as well as confuse and distract the reader.

This chapter reviews the basic components of grammar and punctuation in American English and provides examples of their roles in technical communication.

Grammar in Technical Communication

Appropriate grammar in any form of communication is essential to ensure ideas are portrayed clearly, concisely, and effectively. Grammar impacts a person’s ability to appear professional, knowledgeable, and trustworthy. Additionally, improper grammar can alter the manner in which a statement or idea is interpreted, changing the meaning to the reader and causing otherwise avoidable repercussions. This is important to consider when writing technical documents.

The following resources are recommended, in this order, when considering grammar and punctuation in technical communication:

1. **Project-specific guidelines**, as some projects may have their own rules that differ from this guide.
2. **This guide** for stylistic information about basic grammar and punctuation rules.

3. **Third-party references** for additional resources that expand on the above guidance or provide information not covered in these resources.

Type of Guidance	Third-Party Reference	How to Access
Grammar Mechanics: Humanities Communications	MLA Style, Ninth Edition	https://style.mla.org/mla-handbook-ninth-edition/ (Purchase Required)
Grammar Mechanics: Social and Behavioral Science Communications	APA Style, Seventh Edition	https://apastyle.apa.org/style-grammar-guidelines
Spelling	Merriam-Webster's Collegiate Dictionary	https://www.merriam-webster.com/
Style and Usage	Chicago Manual of Style	https://www.chicagomanualofstyle.org/home.html (Subscription Required)

Parts of Speech

Words individually perform a syntactic function within a sentence or phrase. These functions make up what is known as the parts of speech. The English language traditionally considers eight main parts of speech:

Part of Speech	Definition	Examples
Noun	A word that serves to identify something. Consists of common nouns—a person, place, thing, process, activity, condition, belief, idea, or class—and proper nouns, which refer to the specific name of a person, place, or thing. Proper nouns are always capitalized.	doctor, knowledge, town Dr. Samuel Thompson, Thursday, New York City
Pronoun	A word that replaces a noun or noun phrase.	she, it, something
Adjective	A word that describes or modifies a noun or pronoun.	practical, immense, concerning

Verb	A word that expresses an action, state of being, or occurrence.	maintain, suggest, turn
Adverb	A word that describes or modifies a verb, adjective, another adverb, preposition, phrase, or sentence.	quickly, annually, there
Preposition	A word or group of words that expresses direction, location, time, or introduces an object.	in, of, to
Conjunction	A word that connects other words, phrases, and clauses together.	and, so, because
Interjection	A word or phrase that is used to express a feeling. It is grammatically independent from the words surrounding it.	Wow!, Whoa!, Oh my goodness!

The English language is classified as an analytic language, meaning the functions of words are dependent upon their order ("The Chicago Manual of Style, 17th Edition"). When writing technical documents, writers should consider the parts of speech and how their proper usage and placement work to create strong sentences. Technical writers must also recognize when parts are misused or overused, as this can confuse the reader or detract from the message that is being conveyed. This knowledge is the basis of sentence structure.

Sentence Structure & Form

Sentences are grammatical arrangements composed of a group of words organized in a manner that expresses a complete thought. This arrangement must include, at minimum, a subject and a verb. Additional parts of speech can be used to form different types of sentences. It is important to note that phrases and clauses are also grammatical arrangements. A clause is a component of a sentence that does not form a complete thought independently, as it only contains a subject and a verb. A phrase is a component of a clause, containing a group of words *without* a subject and a verb.

There are four traditional types of sentence structures; a brief summary and example of each is below.

Sentence Structure	Definition	Example

Simple sentence	Consists of one independent clause.	The boy waited for the bus.
Compound sentence	Consists of two independent clauses.	The boy waited for the bus, but it did not arrive.
Complex sentence	Consists of one independent clause with at least one dependent clause.	The boy waited for the bus because his car broke down.
Compound-complex sentence	Consists of more than one independent clause and at least one dependent clause.	The boy waited for the bus because his car broke down, but it did not arrive so he walked home.

In planning a document, it is crucial to consider the audience and their expectations, the purpose of the document, the material that will be presented, and how the information will be organized. All of these factors play a part in selecting appropriate sentence structures. Simple sentences are often easier to understand and digest, but some topics may require detail that cannot be simplified. Conversely, including too much detail could overcomplicate the document and cause the reader to miss the point (Kelley). Understanding the significance of sentence structure is a very important part of the writing process.

Sentence Functions

The function of a sentence refers to the writer's purpose. It gives meaning behind why something is being said. There are four classes of sentences based on their function; a brief summary and example of each is below.

Sentence Function	Definition	Example
Declarative	States an idea or a fact to convey information. Ends with a period.	An extended warranty may protect you from unexpected repair fees.
Imperative	Expresses orders, requests, or directions. Ends with a period or an exclamation point.	Purchase an extended warranty today!

Interrogative	Asks a question. Ends with a question mark.	Is your extended warranty expiring soon?
Exclamatory	Expresses strong emotion. Ends with an exclamation point.	Congratulations! Your extended warranty is now active!

Declarative sentences are the most common class of sentences used in technical prose (Jones). The above definitions are not all-encompassing - for example, intonation can alter the purpose of a statement, and rhetorical questions are not interrogative. A writer should always consider the reason for presenting the information, then decide the most appropriate sentence function.

Sentence Styles

Sentences are further classified by how carefully or loosely the words inside are arranged. There are three style classifications that are generally considered: periodic, balanced and loose. The appropriate sentence style to use greatly depends on the information being conveyed, the audience, and what the writer is trying to achieve. For example, a writer's goals may include persuading the reader, displaying elegance in prose, or achieving balance in the presentation of their document. Different sentence styles may be appropriate for each of these efforts. A brief summary and examples of each sentence style are below.

Sentence Style	Definition	Example
Periodic Sentence	A complex sentence in which the principal clause is located at the end.	Despite the rate increases and client losses, we beat last quarter's earnings by eight percent.
Balanced Sentence	A sentence with two or more clauses that uses repetition through parallel structure, antithesis, or symmetry to create balance.	When the sun goes down, the lights come on.
Loose Sentence	A complex sentence in which the principal clause is located at the beginning, often followed by several subordinate clauses.	The interview was very successful, with eight job offers made and

		five new recruits accepting positions.

These styles may overlap. For example, a balanced sentence can also be a periodic sentence. Periodic sentences are suitable when the writer is trying to persuade the reader or place emphasis on the main point by creating suspense. The reader must follow through on the entire sentence to the end. This may be difficult for some readers, as they have to hold the prior information in memory (Jones). Balanced sentences are not as common in technical communication as loose sentences are. Writers use this style to achieve grace or elegance (Jones). A balanced sentence is often memorable, though loose sentences are the most prevalent style in technical prose. This is because they provide information in a way that is more direct and easier to understand, which are both important features for most technical documents.

Sentence Errors

Incomplete Sentences

As noted in Sentence Structure & Form above, complete sentences must contain a subject, a verb, and must convey a complete thought. An incomplete sentence, also known as a sentence fragment, occurs when any one of these three things are missing. This will leave the reader anticipating more information, causing them to be confused (The Chicago Manual of Style, 17th Edition).

Example: A sales meeting in Atlanta.

Run-On and Fused Sentences

Run-on sentences and fused sentences are sentences in which two or more independent clauses are joined with no connecting words or punctuation to separate them (Purdue). These types of sentences will also confuse a reader, as they are akin to speaking continuously with no pauses.

Example: A sales meeting in Atlanta dozens of corporations presenting new software seminars boost interest in products next season.

Comma Splices

Two independent clauses joined by a comma is called a comma splice. The result is a type of run-on sentence. Though comma splices are sometimes correct, replacing the comma with a semicolon, a coordinating conjunction, or separating the sentence into two is appropriate in most instances. A parentheses or dash are additional alternatives. The selection chosen depends upon the context and tone of the document (Harper).

Example:	The meeting is at 10:00 AM, the seminar is at 3:00 PM. (incorrect)
	The meeting is at 10:00 AM; the seminar is at 3:00 PM. (correct)
	The meeting is at 10:00 AM, and the seminar is at 3:00 PM. (correct)
	The meeting is at 10:00 AM. The seminar is at 3:00 PM. (correct)

Knowing when to recognize these types of sentence errors and how to properly address them will contribute to consistency and clarity in a technical document.

Distinctive Word Treatment

Not to be confused with the more complex subject of word usage (introduced in a later chapter), distinctive word treatment refers to the grammatical qualities that alter words and their meanings. It involves the manners in which specific words can be combined, the effect of word placement in sentences, and the proper use of certain parts of speech. This section will review proper word treatment in technical communication.

Contractions

Sometimes, words can be combined by omitting letters and replacing them with an apostrophe. These contractions result in a shortened form that is more conversational and efficient to read. In some cases, technical prose may benefit from the use of contractions, but it is usually best to avoid them in formal communication. This is because they reduce the intentional emphasis of words and may appear informal and unprofessional (Schall). Other issues include contractions that are uncommon (she would have - she'd've), are awkward (ought not - oughtn't), or have more than one meaning (there's - there is or there has) (The Chicago Manual of Style, 17th Edition).

Example:	**You will** be prompted to enter your password. **Do not** click submit if the task bar **has not** finished loading. (correct)
	You'll be prompted to enter your password. **Don't** click submit if the task bar

hasn't finished loading. (incorrect)

Prepositions

Prepositions indicate the relationship between an object (a noun or pronoun) and another element of a sentence in terms of direction, location, time, and space. They answer the questions "where?" and "when?" as well as indicate ideas such as purpose and contrast. When writing with prepositions, keep in mind that common prepositional phrases may have differences in definitions than the words individually. For example, the terms "pay for" and "pay off" - although they both indicate a purchase, "pay off" also means "to bribe" (Grammarly). Writers of technical prose should not use prepositional phrases that could be misinterpreted.

Examples: The design will be complete **before** the next meeting.
Our final draft was sent **to** headquarters yesterday.

Though some grammarians disagree, it is acceptable to place a preposition at the end of a sentence when no other placement is suitable. If a sentence seems awkward or weak as a result, it should be reworded or rearranged (Schall).

Examples: Where did the box come **from**? (correct)

I saw the envelope when he walked **by**. (correct)

Rewrite the report and send it to James **after**. (incorrect)

After you rewrite the report, send it to James. (correct)

Prepositions should not be used unless they are necessary within a sentence. They add bulk and complicate language when fewer words provide the same information. Removing prepositions when they are not needed results in a clear, direct statement.

Example: **Before** Sara goes **up onto** the stage **in** the conference, do a review **of** the talking points written **for** her **by** the promoter. (incorrect)

Review the promoter's talking points **before** Sara goes **on** the conference stage. (correct)

Pluralization

The English language has evolved over time to introduce variations and exceptions to grammatical rules. Not all of these variations are equally accepted in formal writing, especially

those of plural nouns. There is often confusion regarding proper use, as guidelines used by grammarians, stylebooks, and teachers differ widely (Evans). In general, the academic style presented in The Chicago Manual of Style, 17th Edition should be referenced unless a project-specific style guide is provided.

Some nouns that are plural in form, such as “data” and “media”, are used as a singular form in everyday conversation. In these situations, the nouns should only be used in the traditional plural form in technical communication (The Chicago Manual of Style, 17th Edition).

Example: The **media is** covering the event worldwide. (incorrect)
The **media are** covering the event worldwide. (correct)

Adding an ‘s’ pluralizes most nouns (with exceptions, such as “goose” and “geese”), and a singular noun is typically made possessive with an apostrophe followed by ‘s’.

Example: These **employees** are ready for training.
That **employee’s** computer has not been set up yet.

Plural possessives represent ownership when there is more than one noun. When a plural noun ends in ‘s’, an apostrophe alone is used to punctuate the plural possessive after the ‘s’ (Scribendi).

Example: Beth had three attorneys from one firm review the draft. The **attorneys’** firm is very reputable.

If the noun does not end in ‘s’ when plural, an apostrophe followed by ‘s’ is used. In these cases, do not place the apostrophe after the ‘s’.

Example: The mice were studied for two weeks. The **mice’s** appetites increased daily. (correct)

The mice were studied for two weeks. The **mices’** appetites increased daily. (incorrect)

If the singular and plural form of a noun both end in ‘s’, add an apostrophe followed by ‘s’. This is also true for pronouns (for example, “James’s laptop”). If a sentence is difficult to understand, it is sometimes appropriate to reword the sentence by changing or adding language to ensure concise communication. The reader may have trouble differentiating between the singular or plural noun (Scribendi).

Example: The **series’s** format changed last year.

	The format of the **series** changed last year. The format of the three **series** changed last year.

In a sentence in which two or more nouns have joint possession of an object, an apostrophe followed by ‘s’ is added only to the last noun in the phrase.

Example:	**John’s, Ken’s, and Mary’s** proposal was submitted yesterday. (incorrect) **John, Ken, and Mary’s** proposal was submitted yesterday. (correct)

Avoid placing ‘s’ in parentheses when a sentence presents a noun with an optional plural. Only plural or singular construction should be used to maintain consistency throughout a document. The terms “one or more” can be used if the context necessitates both singular and plural (Google Developer Documentation Guide).

Examples:	The product installation **update(s)** may require administrator **passcode(s)**. (incorrect) The product installation **update** may require administrator **passcode**. (correct) A product key may be needed, which can contain **letter(s)**. (incorrect) A product key may be needed, which can contain **one or more letters**. (correct)

Anthropomorphism

Attributing human characteristics to nonhuman animals or objects is called anthropomorphism (“Style and Grammar Guidelines”). Some phrases that are widely used are unambiguous and acceptable, however as a general rule the use of anthropomorphism in technical communication should be avoided. In doing so, a writer promotes clarity and a formal tone.

Examples:	The thesis **recognizes** a correlation between both roles. (incorrect) The thesis **indicates** a correlation between both roles. (correct) Yeast **wake up** in warm temperatures and multiply. (incorrect) Yeast **activate** in warm temperatures and multiply. (correct)

Articles

Articles define nouns as specific or unspecific, definite or indefinite (Grammarly). The word 'the' is a definite article that refers to a specific noun that is either singular or plural. The words 'a' or 'an' are indefinite articles that refer to a noun that is a general idea and is singular. Generally, 'a' is used before consonants and 'an' is used before vowels, with some exceptions in words that are pronounced differently (for example, "an honest proposal" and "a useful tip"). Articles have a demonstrative value and can alter meaning in a sentence with either their placement or omission (The Chicago Manual of Style, 17th Edition). To ensure the true meaning is conveyed, use appropriate additional articles, hyphenate a phrase, and omit articles when they are not needed. The examples below display how the meaning of the sentence is altered based on the articles used:

Examples:

Last night, **a doctor and author** instructed the class.
Last night, **a doctor and an author** instructed the class.

Did you try the **black and white dress**?
Did you try the **black dress and the white dress**?
Did you try the **black-and-white dress**?

The instruction guide **was little help**.
The instruction guide **was a little help**.

Spelling

Correct spelling is an essential component of technical communication. It establishes professionalism, credibility, trustworthiness, and reflects upon an author's commitment to the information they are presenting. The American English spellings of words should always be used as opposed to British or Commonwealth English (for example, "color" and "colour"), with the exception of directly quoted material and specific context. Merriam-Webster's Collegiate Dictionary should be used as a general reference guide for proper spelling.

To avoid misspellings, consider these tips while writing and proofreading:

- Do not rely on a word processor to perform spell check. Do not ignore all suggestions, but bear in mind that the capabilities of technology are limited and will not address issues such as typographical errors that result in another word, misused terms, and substituted words.
- Be consistent in the resources that are used. If following a project-specific style guide's recommended dictionary in the initial draft, do not use an alternative dictionary while proofreading and editing.

- If a word is commonly used in the British or Commonwealth English form in the context of the subject matter, use that form only if it is appropriate. When unsure, always use American English.

Mechanics

General guidelines on mechanical elements in technical prose not covered elsewhere in this guide include proper capitalization and formatting of specific locations. Additional information regarding numbers, acronyms, abbreviations, emphasis, and formatting text can be found in the chapters on Word Usage, Tone, and Accessibility.

Capitalization

As with any communication, the first letter of sentences should always be capitalized, including sentences in quotations. Proper nouns and terms associated with proper nouns are typically capitalized, however in technical prose The Chicago Manual of Style's format to prioritize lowercase in sentences should be followed. Names and initials of individuals are always capitalized. In the case of names that include particles, refer to a biographical or authoritative source to verify the appropriate format. References to specific tables, chapters, or similar should also be capitalized. The most important rule is to be consistent (The Chicago Manual of Style, 17th Edition).

Examples:	The meeting with **President Obama** was rescheduled. The meeting with **the president** was rescheduled. **E. E. Cummings** was a famous poet, painter, and author.

In technical prose, "all caps" should not be used for emphasis unless completely necessary. The audience may perceive the result as unprofessional and aggressive. Capitalizing the first letter of an entire word or phrase to lend importance to certain words is an outdated format and should also be avoided unless referring to a title or subtitle.

Examples:	While the system is rebooting, DO NOT PRESS ANY KEY. (incorrect) While the system is rebooting, do not press any key. (correct) The **Reboot Screen** will display after installation. (incorrect) The **reboot screen** will display after installation. (correct)

States, Cities, and Countries

When referring to specific locations, do not use abbreviations unless the context of the document requires it. Always include the full location details, such as city, state and country, to avoid confusion with other locations of the same name. After the initial introduction in a document, the city alone can be used in statements that follow.

Example:	The study was performed in Memphis. (incorrect) The study was performed in Memphis, Tennessee, United States. (correct)

Punctuation

Punctuation is used to separate different elements of an idea or to make information more clear. This is an integral part of technical communication because punctuation helps to explain ideas clearly and consistently throughout an entire document. This chapter discusses the fourteen types of standard English punctuation.

While there are several types of punctuation in writing, technical communication focuses on being readily accessible by several users in the standard language it is written. Technical communication utilizes most - if not all - forms of standard English punctuation to make written work easier to read and understand. By sticking to these conventional punctuations and rules, writers who need to replicate writing in a similar fashion will already have a prerequisite knowledge of English punctuation that would otherwise be learned in school.

Technical communication often has a sense of professionalism associated with specific forms of writing, which is why it tends to use more punctuation marks compared to other forms of writing. By learning all the rules of the punctuation used in technical communication, writers can be more prepared in presenting work with certainty and confidence.

Oxford Comma, Semicolons, and Colons

Oxford Comma

The comma is one of the most common punctuation marks in all forms of writing. It has many uses, especially in technical writing. For instance, commas can be used to join clauses or ideas in a sentence. In style guides, it may be used to connect two important ideas relating to one topic.

Example: John has a computer**,** and it is used for homework.

Commas can also be used to clarify mid-sentence. Often, this information may not be necessary, but it is helpful in adding more detail. The sentence should still make sense if the text in between the commas is omitted.

Example: Nancy got a new phone**,** an iPhone 11**,** for her birthday.
Nancy got a new phone for her birthday.

The comma can also be used to list nouns or ideas.These lists are typically for three or more things and immediately followed by a coordinating conjunction. Lists can be used to help categorize information or to group things to visually separate information as shown in the example below.

Example: The company sells phones**,** tablets**,** and laptops.

When discussing a single noun, commas can be used to connect two adjectives together. Commas are only placed in between the two nouns or adjectives. They can not be placed one after the other.

Example: The cute**,** happy couple walked together.

Semicolon

Semicolons are used to link two sentences together. In technical writing, semicolons are typically used when two adjacent sentences have connecting information.

Example: There is a discount for three or more phone users**;** It is great for a family plan.

Colon

Colons are used when new information is introduced. One of the best ways to test if a colon is being used properly is to replace the colon with the word “namely” and check if the sentence still makes sense.

Example: The company sells appliances**:** refrigerators, microwaves, and washing machines.

The company sells appliances, **namely** refrigerators, microwaves, and washing machines.

Colons can also be used to connect separate clauses. While separate, the two clauses may not relate to each other, but the colon connects them to elaborate a single idea.

> **Example:** There is one thing we need to know**:** who's driving the car?

Finally, colons can be used with reference to numbers. This is most commonly seen when telling time, determining ratios in mathematical equations.

> **Examples:** Work starts at **9:00** AM.
> The number of girls to boys in the class was **15:10**.

Standard Punctuation

Punctuation in a sentence or phrase is governed by basic standard principles in American English. These principles aid in promoting consistency and ease of reading while demonstrating the relationship between sentences. This section will review these standard principles and their application in technical prose.

Punctuation in Quotation

Periods and commas should be placed in front of closing quotation marks (The Chicago Manual of Style, 17th Edition). As a general rule, punctuation should remain within quotation marks unless the manner of expression is not part of the quote.

Punctuation	With Quotation	Example
Period	Inside	"We're here**.**" Mom said.
Comma	Inside	"Let's go for a run**,**" she said.
Question Mark	Inside, it is part of the quote Outside, it is not part of the quote	"Do you like cats?" Were you serious when you said, "I want a dog"?
Exclamation	Inside, it is part of the quote Outside, it is not part of the quote	"Oh my goodness**!**" shouted the winner. Don't yell "duck"!

Brackets	Inside	"He [Romeo] is so handsome."
Dash	Inside	"Wait-"
Ellipses	Inside	"I wonder…"
Colon	Outside	I remember his motto: "Work hard."
Semicolon	Outside	She was tired; "I'm going to bed."

Ellipses

In writing, ellipses are used to signal an omission or incomplete thought. In technical writing, there will be fewer cases where this form of punctuation is used since the purpose is to be clear and concise. In specific projects, ellipses can be used in a reference context when using only specific words from a quote; However, in the rare occurrences, it can be used as a trail off.

Example: "Washington became president**…**and chose to serve two terms."
Many ideas came to his mind**…**

Dashes and Hyphens

Dashes separate words into parenthetical statements. An important distinction is that they will have a space on either side of it. The use of dashes has an abrupt interjection to the sentence and can be read as attention grabbing. The use of dashes in technical writing might be more important when bringing crucial information about something to a consumer's attention. Any important notes or warnings may be a specific use for these dashes.

Example: In case of an emergency **- call the authorities -** then let the supervisor know.

Hyphens join two or more words together. Typically, hyphenated words in technical writing will refer to well known terms within the area and industry. These coined phrases are generally associated with specific work settings that permit the use of such words. Unlike dashes, hyphens do not have a space on either side of it.

Example: After cars are assembled, it is important to perform **full-scale** maintenance.

Quotation Marks

Double quotation marks are used when naming the titles of books, movies, songs, articles, etc. Most commonly, double quotation marks are used when writing direct quotes. If it is a sentence, then the quote will begin with a capital letter. If it is only part of the sentence, then that may not be necessary. Words or phrases can also be in double quotes when they are being referenced in the sentence outside of their literal context.

Examples: One of the most famous movies about a boat was **"Titanic."**
The CEO said, **"We are ahead of schedule."**
Unmotivated employees may encounter **"dog days"** during work.

Single quotation marks are only used when there is a quote within a set of double quotation marks.

Example: Jane said, **"**What does **'evaporation'** mean?**"**

Apostrophes

Apostrophes are not primarily used in technical writing since there are no contractions. The absence of contractions creates a more professional tone in the workplace since everyday writing contains an abundance of contractions typically used in spoken or casual conversation. In specific circumstances, depending on the company and projects, contractions may be appropriate following standard English rules. Outside of contractions, apostrophes are used when referencing possession being followed by the letter "s." Further scenarios and uses can be found in the section on Grammar.

Examples: **Don't** put metal in the microwave.
Plug the **refrigerator's** cord into the nearest outlet.

Questions and Exclamations

In technical writing, question marks can be used for asking direct and indirect questions. Since technical writing usually takes place in a past tense written form, in the workplace one of the most common forms of questions are FAQs (frequently asked questions). Most if not all businesses have an FAQs page where technical writers can provide answers to common or recurring customer questions. Questions can also be used as an organizational tactic in instruction manuals when jumping around to certain sections.

Examples: How do I activate my debit card**?**
Already pre-assembled the chairs**?**

Exclamatory sentences will not be used often in technical writing since exclamation marks create 'loud' sentences that do not invoke a professional tone. In workplace projects or presentations, they may appear as titles or headlines to present information; however, exclamatory sentences are used most often in warning labels. Such sentences may be written in large, bold, red writing to draw the consumers attention to important information to raise awareness of a potential danger.

Example: Do not leave appliances unattended or in reach of children**!**

Slashes

Slash marks have several uses in technical writing. One of them is to separate alternatives.

Example: The application requires SAT scores **and/or** ACT scores.

Slashes can also be used to represent a period of time.

Examples: The company was open from **1986/87**.
She works **Monday/Friday** every week.

In technical writing, engineering and science will often be used in cooperation with engineering documentation. In these instances, the slash can represent "per" with numbers and units.

Example: The acceleration of gravity is **9.8m/s^2**.

In math, technical writing can use a slash to represent fractions or ratios. For these instances, the slash may have an alternative name called the scratch.

Example: Shelves must be ¾ stocked at all times in store.

With company approval, technical writing can allow for slashes to abbreviate certain words or phrases that are well known within the industry or in standard English.

Example:	Delivered **w/o** 54 units. w/o = without

Brackets Versus Parentheses

Brackets are used to insert additional information in quotes. These are usually insertions of the writer's own words generally used for clarifying purposes.

Example:	"She lives upstate **[in Orlando]** with her husband and two kids." (Correct) "She lives upstate **[probably to get away from the city]** with her husband and two kids." (Incorrect)

Brackets can also be used with a specific phrase "sic" referencing that the original quote is written with incorrect grammar or spelling. Following the incorrect part in the quote could be brackets with "sic" or brackets with the correct spelling.

Example:	"They stayed at the theatr **[sic]**." (Correct) "They stayed at the theatr **[theater]**." (Correct)

Parentheses are used to insert additional information in a sentence. The sentence should be able to stand alone as a complete sentence even if the information inside the parentheses were removed.

Example:	The National Aeronautics and Space Administration **(NASA)** is responsible for all of America's rocket launches. (Correct) Science helps **(advance medicine and technology)**. (Incorrect)

For inserting information within parentheses, use brackets.

Example: When grading homework, the teacher pinpoints subjects where their students are struggling **(including math, science, history [American], and language arts)**.

Spacing

Unless otherwise noted for a personal project, one space is appropriate for all sentences following their final punctuation mark. Technical writing has eliminated the need for two spaces

after a period since technology automatically makes the font proportional for letters. Before technological advances, people would be taught both ways and begin to cater their writing whichever they preferred. This leads to inconsistencies in technical writing when multiple people are working together on the same project and need to make all the sections appear uniform.

Examples: The computers are old. We need to buy new ones. (Correct)
The computers are old. We need to buy new ones. (Incorrect)

Between sentences, technical writing typically uses a single space setting. This allows for more information to be readily accessible on a single page by utilizing as much space as possible. Technical writing is all about clear communication and efficiency. By using less space to relay information, writing becomes clear, concise, and easier to read.

Passive spacing is an intentional space added to create more whitespace around figures, tables, lists, etc. This allows the information to be easier to read and makes the page more visually appealing. Technical writing is word-heavy, and clumping too many words together can become a burden to both readers and writers. Including visuals, tables, and lists is not only a great way to display information and make it easier to understand, but also a great way to make the reading more enjoyable.

Example: "The grizzly bear is a kind of brown bear. Many people in North America use the common name "grizzly bear" to refer to the smaller and lighter-colored bear that occurs in interior areas and the term "brown bear" to refer to the larger and typically darker-colored bear in coastal areas. However, most of these bears are now considered the same subspecies (The National Wildlife Federation)."

Figure 1. Grizzly Bear
This image shows an adult grizzly bear in the center with a fish in its mouth. (Source: The National Wildlife Federation)

Tabbing Paragraphs and Information

The first line of each paragraph is not indented, and instead starts at the beginning of the page margin. To separate paragraphs, put a full blank line between them. This blank line shows a clear and symmetrical visual of where old information ends and new information begins. A blank line is also appropriate between the heading and first paragraph. In the special case that indentations are used at the beginning of new paragraphs, a line between paragraphs is not necessary.

Leading and Kerning Text

Leading is the vertical distance from the baseline of one line of text to the baseline of the next line of text. This distance determines the legibility of information and plays a factor in visual appeal. In technical writing, the goal is to make sure the lines don't appear squished together, since this can make text difficult to read; however, there cannot be too much whitespace, as this can distract from the lines themselves and appear as blank gaps on the page. It is important not to confuse leading with the distance in between two lines of text. Leading refers to the vertical baselines of text and the spacing between texts that are above and below each other as seen in the figure above. This aspect of technical writing caters more towards the aesthetic appeal of technical writing.

Kerning is the actual space between individual characters. The purpose of kerning is to achieve equal or legible spacing in between characters to make reading easier. In rare instances, the kerning of a text may be adjusted in case the character spacing is uneven to make the text appear more cohesive. When creating or using a new font, technical writers may need to pay extra attention to the use and adjustment of the kern between characters that don't come with a preset space. If overlooked, kerning can cause the characters to look uneven or illegible in an otherwise visually appealing or legible document.

Both kerning and leading affect the proportional aspects of text in a technical document. These spacing elements should be utilized to create a consistent and uniform document and text appearance.

Figure 2. Kerning Versus Leading
(Source: Fabrik Brands)

4. Word Usage

By Beth Winkopp, Briah Christia, and Jasmine Crawford

The use of technical terms is contingent upon the many components of technical writing whether that be audience, tone, discourse communities, style, diction and word usage, appropriateness, etc. Technical terms include the specific language and information within a discourse community (Jones, 1998). Using technical terms including jargon, gobbledygook, slang, cant and argot, doublespeak, tech speak, technobabble and computerese, and shop talk, has both advantages and disadvantages. Nonetheless, this terminology is a necessity within technical writing. This is because technical writers must know when to use technical terms, and when to avoid language that may be biased or offensive to a specific group of people. Technical writing requires an abundance of attention to detail, and understanding the proper usage of both inclusive language and technical terms are part of that.

Technical Terminology

Specific terms for specific discourse communities carry precise definitions privy to the necessary community. However, speaking to the disadvantages of technical terms, those outside of a discourse community may require definition, clarification, and elaboration on these terms. Understanding discourse communities, appropriateness, the audience, and the advantages and disadvantages of technical terminology contributes to the success, or lack thereof, of the purpose of a piece of technical prose.

Discourse Community	Technical Terms
Doctors	Disease, Bone Marrow, Biopsy, Hypotension
Basketball Players	Screen, Slip, Box Out, Down Screen, Fastbreak
Orthodontists	Bruxism, Archwire, Buccal, Crossbite

Inclusive Language

While the use of exclusive language can offend or harm those of a particular group, inclusive language can serve as a vessel that communicates with groups of people in ways that are mindful, respectful, involving, and considerate when the language is used correctly and

empathetically. To use inclusive language effectively, the language must be non-discriminatory and gender and age neutral.

Gender Neutral Terms	Age Neutral Terms
Chairperson, Police Officer, Spokesperson, Councilperson, Spouse, Parent	Older Persons, Older People, Older Individuals, 65 and Older

Appropriateness

Appropriateness for technical writing is expanded far beyond word choice. Appropriateness carries the means of "suitability and compatibility" (Jones, 1998). In accomplishing the purpose of a document, the appropriateness of word choice, tone, formality, informality, language, structure, associations, connotations, denotations, subject, and perception must all be detailed and precise. Achieving appropriateness in technical prose involves not drawing attention to one's self, while also not inviting criticism, which ultimately helps to refine prose in an effective manner. The appropriateness of words or language can best be perceived by the connotations and denotations being used.

Words	Denotative Meaning	Connotative Word
House/Home	Building or place in which somebody lives	**Home**: Feelings of warmth, family and love within a house
Investigate/Look over	To inspect something	**Investigate:** Careful review

House, *home, investigate,* and *look over* carry the same denotations, but invoke different feelings. The word that a technical writer chooses to use based on connotation serves as the vessel to either persuade or not persuade a reader pertaining to a subject and its formality and significance.

Understanding Discourse Communities

Technical prose is more than the structures of sentences and paragraphs and placing words on a screen or page. Writers must be aware of who and what communities they are writing for as it may differ with different pieces of writing. These communities and people are called *discourse communities*. A discourse community pertains to a group of people that associate with each other in sharing a special language, experiences, basic knowledge, classes, majors, committees,

professions, organizations, hobbies, expectations, values, methodologies, goals, demographics, geographics, and so on.

Profession	Discourse Community
Doctor, Nurse, Dentist, OBGYN, Physician, Pharmacist, Athletic Trainer, Paramedic	Medical
Lawyer, Police Officer, Politician, FBI, President, Governor, Judge	Government/Law
Athlete, Rapper, Singer, Actor, Influencer, Dancer, Artist, Photographer, Performer	Entertainment
Teacher, Historian, Scientist, Counselor, Principal	Education
Engineer, Programmer, Web Developer, Information Technologist, Technical Writer	STEM

For each discourse community, there are specific criteria, terminology, language, and writing styles relevant to the community. Writers must be able to learn the rules of their own discourse communities, then apply them through experience (Jones, 1998). As writers carry audiences through their writing, they must be able to write for not only those in their discourse communities, but also for those outside of their discourse communities. Most writers lack the ability to write for those outside of their communities due to the disadvantages of technical terms. As there are advantages and disadvantages of using technical terms, writers must decide when their use is appropriate. This decision is based upon audience, purpose, and context. However, audience is the most important factor.

Advantages and Challenges of Using Technical Terminology

The use of technical terms is necessary in technical prose. However, using technical terms carries its advantages and disadvantages whether it is classified under jargon, gobbledygook, slang, cant and argot, doublespeak, tech speak, technobabble and computerese, or shop talk. Writers must be cognizant of when to use appropriate technical terminology to avoid any disadvantages. Challenges include words with specific meanings, confusion with general vocabulary words, words with similar meanings and different spelling, words with similar

pronunciation and different spelling, the misuse of parts of speech, confusion of metathesis, or words causing conflict.

Jargon

Jargon is defined as the particular vocabulary or terms that are assigned to a discourse community. Jargon can be a negative feature due to technical terms being used incorrectly. The language is deemed foreign to those of an audience outside of the specified discourse community. Additionally, jargon seeks to impress the audience or make oneself seem more prominent. However, jargon makes writing and information easier to understand for those that may reside inside of a discourse community. The jargon terms in the example below are in bold.

> **Example:** The **defendant** denied the **plea deal** and took his case to **trial**.

Gobbledygook

In connection to jargon, gobbledygook occurs when long sentences and paragraphs are constructed with ostentatious and complex words. Gobbledygook goes against the technical rule of appropriateness that aims to avoid drawing attention to oneself and inciting criticism. Gobbledygook also disturbs the purpose of a piece of technical writing, and can cause confusion, financial loss, and ethical issues. However, gobbledygook does have a place in technical prose when it elaborates on a topic with appropriate and complex words pertaining to the specific discourse community being targeted. The gobbledygook terms in the example below are in bold.

> **Example:** We must **conduct scholarly inspections** of the entire student body **expeditiously** to **monitor** their progress.

Slang

While most of the specialized languages - jargon, cant and argot, and slang - are fairly similar, they all are also different. Slang includes words and phrases that are deemed less sophisticated in comparison to more professional or accepted language. Slang, much like jargon, involves language that is understood by a particular group of people and unusual to another. Although slang is understood by specific groups, slang makes writing less formal and credible.

> **Examples:** Chill, Fr, OMG, YOLO, DM, Dope, Woke, Cool, Fam, Shady, L, Nvm, Salty, Lowkey, Tea

Cant and Argot

Cant and argot can be classified as slang because all both of these specialized languages alienate society and prevent some from understanding specific words and phrases. Cant is "the language of members of the underworld," while argot is "criminal cant" (Jones). Examples of cant terms are below.

Examples: Homies, Gang, Bruh, Squad

Examples of argot terms are below.

Examples: Me and **the homies set up shop** in the **rollin' tens** and stood on the **block** waiting to **bang**.

Doublespeak

Doublespeak is classified as a type of jargon, as jargon is classified as one out of four kinds of doublespeak. The four classifications of doublespeak include euphemism, jargon, gobbledygook or bureaucratese, and inflated language. Euphemism is seen when a word is being used to avoid clear and direct communication. The classification of jargon is defined as specific language used for groups of similarity and used to highlight the authority and credibility of the speakers within the specific subject. Gobbledygook or bureaucratese includes using bigger words that overwhelm the audience, create longer sentences, and make the writing better. Lastly, inflated language intends to provide significance and importance to the simple everyday life things.

Doublespeak Type	Widely Used Term	Doublespeak
Euphemism	Dead	Passed Away
Jargon	Gang Banger	Criminal
Gobbledygook or Bureaucratese	Suspect	Person of Interest
Inflated Language	Ball Insecurity	Fumble

Tech Speak

Tech speak is a procedure used to enhance user status. Jargon may be present in the construction of tech speak when both work together to promote cohesion amongst people and audiences instead of encouraging isolation. Tech speak consists of language that lies between simplicity and complexity to represent innovation and "structural-functional description" (Jones, 1998). Tech speak's sole purpose serves in being able to provide descriptions of things in simplicity and its true nature. Examples of tech speak are below.

Examples: Cookies, Glitch, Vivo Recombinant Genetic System (VRGS)

Technobabble and Computerese

Computerese occurs when jargon of computers is used in writing. While both computerese and technobabble are both specialized languages, they differ in the instances of marketing and public relations and extracomputer contexts (Jones, 1998). When computerese is used as a filler, without good reason, with obsession, or by those unaware of the meaning to appear knowledgeable, is when computerese transforms into technobabble. Technobabble is an offset of computereses. Examples of technobabble and computerese are below.

Examples: Browser, Software, Hardware, RAM/ROM

Shop Talk

Shop talk is jargon that is used in everyday life that is specific for and specialized in a particular company, group, or subgroup of an occupation. Examples of shop talk and their meanings are below.

Examples: **10** = Beautiful Woman
PTO = Paid Time Off

Addressing Disabilities

People with disabilities are a large group of individuals that are often victimized by language bias. People who have or are experiencing mental or physical illnesses or challenges are oftentimes labeled as handicapped, disabled, or disadvantaged. These labels can be offensive to those experiencing and living with physical and mental challenges. Those who do not have

any disabilities should not be labeled as 'normal' or 'healthy', as this can be considered offensive. The American federal law known as the Americans with Disabilities Act (ADA) aims to prevent individuals with physical or mental challenges from being discriminated against (Jones, 1998). Writers must be aware of the perceptions or stereotypes of age and disabilities that may exist in the world. When discussing disabilities, writers must steer clear of inviting attention to a group or groups of people and using discriminatory labels.

Incorrect	Correct
Handicapped, Disadvantaged, Crippled	Person with a disability/disabilities, person with challenges
The blind	Person who is visually impaired or blind
The deaf	Person who is hard of hearing
Healthy, Normal	Person who is able-bodied, Person without disabilities

Addressing Age

Similar to the ADA, there is a federal law called the Age Discrimination in Employment Act of 1967 (ADEA) that aims to prevent discrimination against individuals based on their age. Despite this federal law, some companies, television shows, media outlets, and programs are not prevented from holding a particular target audience, whether it be the youth or younger groups, or older or elderly groups. Writers are entitled to holding specific target audiences. However, writers must be aware of language that can isolate particular groups of people of a certain age, as doing this can result in detrimental and lawful consequences. Writers should pay intricate attention to detail when addressing age and target audience and avoid using language that may be perceived as age discrimination.

Age Bias Situations to Avoid	Age Bias Terms to Avoid
Firing or Refusal to Hire Based on Age	Seniors, Elderly, Old, Senior Citizens

Promoting Diversity

The primary duty and responsibility of a technical writer includes being able to inform readers on specific subjects and explain the use of things and objects to a specified target audience. In

completing these duties, technical writers must consider the concepts of diversity, equity, and inclusion.

For writers to align their writing with the concepts of diversity, equity, and inclusion, they must understand their audience and consider who or what might be included within that audience. Including diversity in technical writing may include a wide range of ages, genders, races, ethnicities, cultures, languages, experiences, occupations, sexual identities, religions, and so on.

Equity in technical writing means aligning the writing with equality and individual necessity to assure that all people are subject to and have an equal chance for the same opportunities despite personal differences.

Lastly, inclusion involves making those of the target audience feel welcomed and involved. In aligning technical writing with diversity, equity, and inclusion, writers will consider the use of diverse names and gender-neutral pronouns sometimes contingent upon region.

Diverse Range of Names for Examples
Jane Doe or John Doe

As a technical writer's target audience may differ by gender or country, technical writers must use gender-neutral pronouns such as they/them/theirs as the default pronoun. Examples should include diverse names that reflect a wide variety of regions.

Technical writers may only be able to grasp their audience on a surface level. Therefore, they may not be aware of the specifics of their audience. Using gender-neutral pronouns and diverse names depending on region allows technical writers to promote diversity, equity, and inclusion in which these terms make the whole audience feel welcomed, included, considered, and equal.

Gender-Neutral Pronouns	**Diverse Names Depending on Region**	**Personal and Relative Pronouns**
They	**USA:** Jane Doe or John Doe	Whom, Whomever
Them	**Mexico/Egypt:** Fulano,Fulan or Fulana, Fulanah	I, It, We, Us
Theirs	**Japan:** Yamada Taro or Yamada Hanako	He, She, Him, Her

Writing Non-Inclusive Code Terms

Technical documents may sometimes include code or code terms that contain non-inclusive names or keywords that are embedded in the code itself. As these names or keywords are generally essential to the code's purpose and function, they can't simply be reworded or erased like typical vocabulary. Instead, technical writers should use a minimalist approach with these terms by avoiding their use when possible, while still providing clear documentation to readers (Google Developer Documentation Guide). Below is an example of a non-inclusive name in the cluster names of a configuration file:

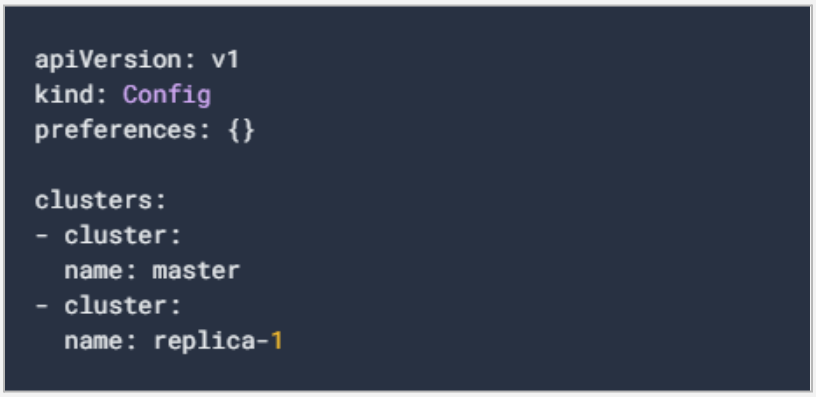


Figure 1. Non-Inclusive Cluster Names
This image displays an example of the non-inclusive cluster name 'master' in a configuration file. The example is properly displayed in code font to indicate to readers that the term is meant for code documentation. (Source: Google Developer Documentation Guide, *Inclusive Language*)

Non-inclusive terms may also appear as established keywords in certain coding languages such as SQL:

Figure 2. Non-Inclusive Established Keywords
This image displays an example of the non-inclusive keyword 'slave' in a line of SQL. The example is properly displayed in code font to indicate to readers that the term is meant for code documentation. (Source: Google Developer Documentation Guide, *Inclusive Language*)

Mentions of non-inclusive terms beyond examples and initial explanations should be written using the preferred term (ex: *parent node, replica*) whenever possible to avoid the unnecessary repeated use of the term (Google Developer Documentation Guide). When avoidance is difficult or would otherwise influence how the text is interpreted, the non-inclusive term referring to the entity name or keyword must be presented in code font. If possible, the term should also be placed in parentheses to help clarify that the term should be interpreted as code and not as a vocabulary term.

Examples: The configuration file helps you create a parent node (which is named `master` in the file). (Google Developer Documentation Guide)

Start the replica by using the `START SLAVE` statement. (Google Developer Documentation Guide)

Numbers, Symbols, and Units of Measure

The way numbers and symbols are presented and integrated in a text can determine how a reader interprets the information. In technical writing, numbers greater than nine should generally be written in numeral form while numbers below nine should be spelled out. Some exceptions to this rule are fractions, decimals, and measurements, which are typically written in numeral form to ensure that texts with many numbers and figures are easy to read and understand (Grammarly). Though specific rules on numbers and measurements may vary between different disciplines, this information should be used as a general rule of thumb when writing technical documents.

Written vs. Numerical Numbers

Scientific and technical documents typically present numbers below ten in written form and numbers above nine in numeral form (Grammarly). This is especially true for larger numbers like those in the millions, billions, and trillions, which are more concise and legible in numeral form. Here are some examples of proper and improper formatting of numbers:

Examples: We have **seven** days to complete the project. (correct)
We have **7** days to complete the project. (incorrect)

The download will take **24** hours. (correct)
The download will take **twenty-four** hours. (incorrect)

This website has had **18,253** visitors. (correct)
This website has had **eighteen thousand two hundred and fifty-three** visitors. (incorrect)

This rule extends to the formatting of approximate numbers as shown in the examples below.

Examples:	About **4,000** employees were hired when the business expanded. (numeral) Approximately **one** in **four** participants were female. (written out)

Exceptions

There are a number of exceptions to this rule, which include fractions, decimals, measurements, percentages, page numbers, and money. Since these exceptions reflect data and units of measure, it's essential that they are expressed in a way that readers can accurately interpret.

Fractions, Decimals, and Percentages

Fractions should be expressed as decimal numbers whenever possible. Fractions of larger numbers should be paired with the related numeric term ('million', 'billion', etc.) beside it (Grammarly).

Example: Earth is estimated to be **4.54 billion** years old.

Decimals and numbers between one and ten that aren't whole numbers should be written as numerals (Scribendi). This includes percentages paired with the percent symbol. The only time the percent symbol should not be used is when the number is written at the beginning of the sentence.

Examples:	Oceans hold about **96.5%** of Earth's water. (percentage in sentence) **Three percent** of Earth's water is fresh. (percentage beginning a sentence)

Hyphens and Numbers

When written out, some numbers and compound adjectives paired with numbers should be hyphenated to indicate that they're connected. All two-word numbers from twenty-one to ninety-nine should include a hyphen (Grammarly). Numbers in the hundreds, thousands, millions, and billions will exclude a hyphen as the term for scale ('hundred', 'billion', etc) isn't directly connected to the number quantity itself.

Examples:	**Thirty-seven** birds live here. (hyphenate two-word numbers) **One hundred** birds live here. (space scale terms) **Two thousand one hundred and thirty-seven birds** live here. (space scale

terms and hyphenate two-word numbers)

Other numbers that are hyphenated are numbers connected to compound adjectives. These are numbers that work together with words to describe something that follows them in a sentence (Grammarly).

Examples: It's a **10-minute** train ride to get to the city. (correct)
It's a **ten-minute** train ride to get to the city. (correct)
It's a **ten minute** train ride to get to the city. (incorrect)

We're studying **thirteenth-century** art. (correct)
We're studying **thirteenth century** art (incorrect)

My cat sits in the **third-story** window. (correct)
My cat sits in the **third story** window (incorrect)

This can appear in the form of a word that directly modifies either a numeric or written number as seen in the examples above, or in the form of a fraction that modifies a noun as seen in the examples below.

Examples: I was **half-awake** this morning.
The recipe calls for **one-fourth** cup of water.
The US is over a **quarter-trillion** dollars in debt.

The exception to this is when the number is in the second half of the compound adjective (Grammarly).

Examples: She was born with **Type 1** diabetes.
I attend class in **Building 2**.

Finally, ranges of numbers should be hyphenated with a single dash and no spaces between the numbers. If the numbers are written out, the dash should be replaced with the word 'to' or 'and' as appropriate to indicate the range. This rule also applies to number ranges that refer to dates.

Examples: The print ran from **2010-2013** (correct)
The print ran from **2010—2013** (incorrect, includes an em-dash)

There are **9-12** customers on Mondays. (correct)
There are **9 - 12** customers on Mondays (incorrect, hyphen has spaces)

We get somewhere between **six and fifteen** visitors every day. (correct)
We get somewhere between **six-fifteen** visitors every day. (incorrect)

The war lasted from **1993 to 2012**. (correct)
The war lasted from **1993-2012**. (incorrect)

Measurements

Measurements should always be written in numeric form regardless of the quantity, this includes numbers both above and below ten. When including measurements, they should be paired with their unit of measure, which is typically presented in its abbreviated form (see the section on "Units of Measure" below for further information).

Examples: The bar is **3.48 cm.** long. (small measurement as numerals)
One foot is equal to **30.48 cm.** (large measurement as numerals)

This exception extends to the inclusion of money, which should be written in numeral form paired with the corresponding currency symbol.

Example: In America, apples typically cost about **$1.31** each.

Time and Dates

Units of time can be a bit trickier to write, as their format changes depending on their purpose. References to decades or centuries, for instance, are typically spelled out while references to exact times should be written as numerals (Scribendi). The only specific times that are spelled out are 'noon' and 'midnight', though it's generally better to use numerals and 24-hour time measurements. This is especially recommended when writing for international audiences (Google Developer Documentation Guide). When using a twelve-hour clock, specific times should be followed by a space and a capitalized AM or PM. Minutes can be removed from round hours for conciseness.

Examples: The theater burned down in the **sixties**. (correct)
The theater burned down in the **'60s.** (incorrect)

We'll meet at **3:15 PM**. (correct)

We'll meet at **three-fifteen pm.** (incorrect)

I wake up at **7 AM** / I wake up at **7:00 AM**. (correct)
I wake up at **7 am** / I wake up at **7:00 am.** (incorrect)

When expressing time zones, abbreviations should be avoided when possible, particularly when writing for international audiences. This is because readers may be unfamiliar with certain abbreviations, or the abbreviations can be misinterpreted in the text.

Examples: The meeting will start at **12:00 PM** Eastern Standard Time. (correct)
The meeting will start at **12:00 PM** EST. (incorrect)

The project is due at **3:00 AM** Samoa Standard Time. (correct)
The project is due at **3:00 AM** UTC-11**.** (incorrect)

When writing dates, months should generally be written out with the full four-digit year and two-digit day. This will typically be formatted as [month_day of month,_full year], though the day of the week can be included before the month as [day of week,_month_day of month,_full year]. Here are some practical examples:

Examples: September 16, 2013 (correct, month/day/year)
Friday, September 16, 2013 (correct, weekday/month/day/year)

September 16th, 2013 (incorrect, day includes ordinal)
September 16, '13 (incorrect, year is abbreviated)

If the full date is written in the middle of a sentence, a comma should be added after the day. If the date is written in the middle of a sentence and only includes the month and year, the comma can be excluded.

Examples: We'll meet on **February 13, 2013** at the airport.
The game was released in **February 2013** in America and Europe.

When writing dates in numeric form, it's best to use dashes instead of slashes between the year, month, and day. The numeric format should be avoided when possible, however, particularly when writing for international audiences. This is because different countries have different date styles. For instance, US dates are written as month-day-year, while European dates are written as

day-month-year. If a date must be written in this format, it's best to use the international format of year-month-day or yyyy-mm-dd for international documents.

Examples: 01-01-2021 (correct)
1-1-21 (incorrect)
01/01/2021 (incorrect)

October 6, 2015 written as 10-6-2015 (US style date)
October 6, 2015 written as 6-10-2015 (European style date)
October 6, 2015 written as 2015-10-6 (International style date)

If a specific time is indicated with a date, both the date and time should be placed together with the date preceding the time.

Examples: We'll meet on February 13, 2013 at 6 PM in the airport.
We'll meet on 2013-02-13 at 6 PM in the airport.

Number Placement

When sentences begin with a number, the number must always be spelled out regardless of how large or small the number is.

Examples: **Fifteen** events were scheduled for the February launch. (correct)
15 events were scheduled for the February launch**.** (incorrect)

These sentences can be rearranged to accommodate larger numbers or to avoid writing out numbers.

Example: There are **15** events scheduled for the February Launch.

Another tricky exception is in paired numbers: when one or more numbers are written in a row. When two numbers appear next to each other in a sentence, one of these numbers must be spelled out and the other numerically written for clarity. Readers can easily misunderstand information if two unrelated numbers are presented identically side-by-side.

Examples: The kindergarten class was made up of **sixteen 5**-year-old children. (correct)

The kindergarten class was made up of **sixteen five**-year-old children. (incorrect)

The kindergarten class was made up of **16 five**-year-old children. (correct)
The kindergarten class was made up of **16 5**-year-old children. (incorrect)

Casual Language

Numbers mentioned in casual language should be written out, as they're not formal measurements.

Example: I called him **a million times**, but he never answered.

Symbols and Units of Measure

Like numbers, symbols and units of measure in technical writing follow the standards of scientific documentation. This means the formatting and inclusion of symbols and units of measure adheres to a general set of rules that should typically be followed unless a different format is required or provided by the organization, company, or group requesting the technical document. Symbols in technical writing include common writing symbols like the ampersand (&) or currency symbols like the American dollar ($), as well as abbreviations and acronyms for units of measure like 'K' for Kelvin or 'm' for meter.

Common Writing Symbols

Common writing symbols are generally excluded from formal or scientific writing. Here are the three most common writing symbols:

Symbol	Name	Meaning	Example
&	Ampersand	Denotes the conjunction 'and'. This symbol is typically used to grammatically connect words or phrases.	We bought milk & bread. (informal use) In-text citation by (author & co-author) (formal use)
@	Asperand	Denotes the word 'at' and is commonly used in digital	I told @FriendName a joke. (digital use)

		communication to address specific people/accounts.	We'll meet tomorrow @ noon. (textual use)
#	Pound, Octothorpe, or Hashtag	Denotes the word 'number' and is a tag for digital media. In code, this symbolizes that the following text is a comment, not an instruction.	I use a #2 pencil (textual use) #MovementName (digital use) # The following code embeds live links in the website (coding use)

Since technical writing is considered formal writing, these symbols should generally be avoided in a technical document. The exception to this is when they appear as part of company names, contact information, etc. Whenever a symbol is used for a name, title, address, code, or similar subject, the symbol must be included in the text to properly represent the subject. A common example of this is the use of symbols in email addresses or business names:

Examples: The client can be contacted at *examplename@email.com*.
He was a lawyer at **Name & Name** law firm.

The asperand (@) symbol must be included to properly represent this email address, and the ampersand (&) must be included because it's part of a name. Symbols should never be included as placeholders or shorthand outside of these exceptions, as they can be seen as unprofessional and could potentially lead to confusion or miscommunications between the writer and audience.

Currency Symbols

It should always be clear what country's currency is being described when including monetary amounts in a document. This is because many countries share currency symbols. If there's a chance that the indicated country or currency is vague or easily misunderstood, the country prefix and currency symbol should be placed before the amount (Google Developer Documentation Guide).

Examples: US$15 (US dollar amount)
CA$15 (Canadian dollar amount)

When including currency, the monetary amount should be formatted according to the standard of the country being referenced. Some elements that may change depending on location or

culture are the placement of the currency symbol, the use of placeholders/indicators like decimals and commas, and the indication of negative amounts. Companies, groups, or organizations that often work with international currencies may have documents or charts detailing location-specific currency symbols and formats. Otherwise, further information can be found in style guides that deal with international documents or in official sites that handle international currency conversion.

The appearances of the currency symbols themselves can differ depending on the country and sometimes on the document's formatting style, since some countries have defined symbols like the French Franc (₣), while other countries may have a combination of letters like "GBP" for the British Pound. Most countries will even have a mix of both, like the Japanese yen, which uses the symbol (¥) and the letters "JPY". These letters are known as currency codes.

When including non-local currency references, it's essential to note that some currency symbols may be inaccessible to audiences using screen readers. If this is an issue that needs to be addressed when writing a technical document, it's best to exclude foreign symbols whenever possible in favor of International Bank Account Numbers or IBAN Currency Codes. These are three-letter codes that indicate what country specific currencies belong to without the use of symbols. An extensive list of these codes can be found on the official IBAN website.

Standard Units of Measure

Technical writing typically follows the International System of Units (SI). This means that units and abbreviations are treated like mathematical symbols rather than grammatical shorthand. Following this style, units of measure are written as the digit followed by a space, then the prefix symbol, and finally the unit symbol (CHEC).

Example: 16 GHz (correct)
16GHz (incorrect, missing space)
16 GigaHZ (incorrect, prefix is written out)
16 GHertz (incorrect, unit is written out)

These prefixes and unit symbols should adhere to the standard SI symbol format to avoid the use of incorrect or confusing abbreviations. Information and charts on International System of Units (SI) abbreviations and symbols can be found under the NIST Metric Program. The specific symbols used in a technical document will differ greatly between documents based on the audience, purpose, organization, and field being written for. Just like grammatical symbols, these SI measurement symbols should be used unless the companies, groups, or organizations requesting the document request other standards.

SI measurements are designed, as the name states, to be international units of measure. If a document does not follow SI measurements, it is essential that cultural measurements are

identified and clarified in texts - especially if the text is written for a multicultural or international audience. This is because different regions or countries may use different units of measure. For instance, one Imperial gallon is 20% larger than the US gallon.

Example:	The barrel could hold up to 12 Imperial gallons. (correct, unit is clearly identified) The barrel could hold up to 12 gallons. (incorrect, unit could refer to two vastly different amounts)

Regardless of what system or standard is used in a document, the key to clear writing is consistency, as uniform formats and styles in a document can increase the clarity and legibility of information. Technical documents should always strive for clarity, especially when dealing with measurements or mathematical equations, as even the smallest changes between formats and styles in a document can cause readers to misinterpret information.

Other Formatting Rules

While the formatting of numbers and units of measure should be consistent throughout a piece, the way they appear in text can be slightly different from the way they appear in tables. For instance, the text may contain a simple abbreviation of a unit of measure within an explanation, abbreviation, or reference. As these instances aren't formal measurements, the units of measure may be abbreviated in a different way than the units of measure that appear as symbols in a table or figure.

Writing Examples

Writing examples in technical writing serve the purpose of avoiding the use of personal and identifiable information. Personal and identifiable information includes - but is not limited to - names, pronouns, phone numbers, objects, addresses, locations, and places. As technical writing is used to inform its readers based on facts, statistics, or usability instructions, personal and identifiable information is excluded. With personal and identifiable information being excluded, technical writers will always avoid the use of real names, phone numbers and addresses. The contribution of avoiding the use of personal or identifiable information when using writing examples includes the use of gender-neutral singular pronouns and placeholder names, when possible. A vital component of technical writers using examples is protecting the confidentiality of clients, employers, employees, and professional organizations. Personal or identifiable information is only released based on given personal or legal consent.

Placeholder Name Examples	Gender-Neutral Singular Pronouns

John Doe, Jane Doe, Widget, Mainstreet, Anytown, USA	They, Them, Theirs

Placeholder Phone Number Examples	IP Address Example
+1 (XXX)-XXX-XXXX +1 (123)-456-7890 +1 (999)-999-9999	0.0

Common Vocabulary and Prose

All documents should maintain a common vocabulary and keep with a dedicated prose. Establishing a common vocabulary, and selecting the proper document type allows the document to be clear, concise, and easily understood by the audience. Technical documents should default to clear and basic language to appeal to the audience and minimize confusion. Creating and maintaining a common language will also ensure that the reader is not distracted by technical or internal jargon.

Document Prose Type

Deciding on the document prose type will allow for the entire document to be the correct format for the message that is conveyed and allows for the information to be organized and presented in a manner that the reader can understand.

Technical Prose

Technical writing is focused on providing detail and lucid information about a product or service (Jena, 2022). This is open to audiences who may be using, procuring, or working on the product or service. Technical documentation is goal oriented and educates the reader on how to achieve the end goal of the document. The audience for technical documents is usually less knowledgeable about the subject than the writer, and will require more definitions and explanations.

Technical documents can and should rely on charts, images, and graphics. These will help guide the reader with understanding complicated technical processes or infrastructure designs. These images should be relevant to the content to help educate the reader and should not be in the document for vanity purposes. Graphics in technical documents help support the verbiage that is in the document, and should not be used by itself without any supporting text

In technical writing, the viewpoint of the writer should not be discussed or obvious in the document. Technical documents should show as little bias as possible, as it should be describing the application, purpose, creation, or architecture of a product or service (Krosel).

Technical documents have multiple forms of audiences which range from end-users - users of a certain product or process - to supporting staff who are service matter experts in the topic. It is up to the writer to clearly identify and understand the audience for the document being created.

Common technical documents include:

Technical Document	Use
Manuals	Complete guide for a product. Can be in a book format that has set up, troubleshooting, and basic product information.
User Guides	A guide that explains how a product works and how-to guides on completing a certain process with a specific product.
Project Plans	Document that explains a project's main deliverable and what it will accomplish.
Knowledge Articles	User or Technician facing troubleshooting guides to certain problems.
Press Releases	Public announcement on new products, solutions, or news.
Technical Marketing Communications	Sales material that is sent to a customer to show how a business can meet their needs.
Style Guides	Standards documented for an organization or department on how media or documents should be formatted.
Handbooks	Standards on policies for business processes or products.
Business Standards	Rules and guidelines on how businesses choose to market and do business.

Academic Prose

Academic writing is a piece of writing in which the writer proves a theory or viewpoint and emphasizes a single subject (Jena, 2022). These documents are seen in all phases of

academia, and the audience is usually a subject matter expert or teacher, who may have more knowledge of the subject than the writer.

Academic Document	Use
Term Papers	Written to argue a point or position, original work that is backed by and compiled from information from studies, write ups, or other sources.
Studies	Document that shows results or innovation on a single topic from actions or research performed by the writer.
Scientific write ups	Testing of a hypothesis for a branch of science.
Research documents	A written project that is on a specific topic which can go over cause and effect, studies, or hypothesis.

Internal Communications

Communications that will only be publicized internally in the organization and read by employees. Company-based terminology that may be used includes company wide tools, vendors, and departments. If there is an acronym key, it should be cited at the end of the document for new hires who may need more information.

External Customer Facing

Documents that are customer facing are used to educate or inform the audience. These documents should have all company terminology defined in the first use, and then used with the correct prose throughout the document.

Terms That Are Common For All Audiences

Some words are commonly used in technical prose and unambiguous to the audience. The following terms will not require a definition or description while referencing in a technical document, regardless of audience:

Examples:	Software Hardware API (Application Programming Interface) Cookie

Back-end
Hardwired
Wireless

This list is not exclusive, but should be used as a reference to understand the qualities of common terms for all audiences.

Abbreviations, Acronyms, and Initialisms

Shortened versions of terminology and products are common in technical writing. Shortening terms and products helps allow the reader to get through the information quickly, and saves time when speaking or writing on processes or products. Abbreviating words and names can create confusion with a reader if they are unfamiliar with the technology or technical jargon in the document. When using abbreviations, it is imperative the audience understands what the shortened version of the term is defining to minimize confusion or complications.

Classifications

Shortened phrases and words come in three different categories: abbreviations, acronyms, and initialisms. Each contains their own rule set and use case. When using any shortened terminology in documents, it is imperative to understand these rules to promote clarity to the reader and ensure that the material is interpreted correctly and easily.

Abbreviations

Abbreviations are a shortened or contracted form of a word or phrase (Dictionary.com, 2020). These often do not align with the initials of multiple words, and are used for longer, commonly used terminology.

Examples: Corp = Corporate
Tech = Technology
Comp = Computer
Prod = Production

Acronyms

Acronyms are any abbreviation of a term or product that is formed using the first initial letters of the words that make up the term or product (Dictionary.com, 2020). These are often pronounced as a word.

Example: SaaS = Software as a Service
NASA = National Aeronautics and Space Administration
SCUBA = Self-Contained Underwater Breathing Apparatus
WiFi = Wireless Fidelity

Initialisms

Initialisms are similar to acronyms, but when shortened to a subset of letters from the initials of the phrase, product or terminology, the letters are pronounced one at a time (Dictionary.com, 2020).

Example: IT = Information Technology
BYOD = bring your own device
CLI = command Line Interface
SDE = Software Developer Engineer

Use Cases

When using shortened versions of a phrase, product, or terminology, it is best to only abbreviate if the term or phrase will be used multiple times throughout the document. If only used once, it should be fully spelled out and defined but never abbreviated.

If the document will reference the abbreviation multiple times, spell out the term or phrase fully in the first use and provide the abbreviated format in parentheses directly after. The abbreviated form can be used throughout the rest of the document.

Example: When submitting a ticket to the Global Service Desk (GSD), please include your machine name.

Commonly Used Acronyms

Acronyms that are used in the reader's daily life or career, like USB, WiFi, and URL, should not require definition. Depending on the audience of the documentation, other commonly used acronyms and initialisms can be used throughout the document without definition. Understanding the level of knowledge the audience has is imperative to establish and use a list of common acronyms.

Common acronyms also include units of measurements, including temperature, metric, and imperial measurements. These can be abbreviated without definition, provided it is clear that the writer is using these to display a form of measurement.

Acronyms to Avoid

It is best to ensure that any acronym that is created for a technical document does not spell any inappropriate or potentially offensive terminology or goes against a company standard. Use cases and examples are provided below.

Avoid acronyms that spell out “laughable” or “inappropriate” words:

Examples: The Better Units to Transport Technology (BUTran) (correct)
The Better Units to Transport Technology (BUTT) (incorrect)

Technology Hub of Tennessee (THT) (correct)
Technology Hub of Tennessee (THOT) (incorrect)

Avoid non-approved abbreviations of third-party brand names, products, or tools:

Examples: Adobe Creative Cloud Suite (correct)
Adobe Creative Cloud Suite (ACCS) (incorrect)

ServiceNow (correct)
ServiceNow (SNow) (incorrect)

Avoid acronyms that are the same initialisms as other shortened names in the same document:

Examples: Software Asset Management (SWAM) (correct)
Satellite Analyst Manager (SAM) (correct)

Software Asset Management (SAM) (incorrect)
Satellite Analyst Manager (SAM) (incorrect)

Avoid overuse of acronyms that will create confusion to the reader:

Examples: When dealing with SAM, we need to make sure that Software Asset Management is involved in all conversations. (correct)

When dealing with SAM, we need to make sure that SWAM is involved in all conversations. (incorrect)

The IP address and VPN must be aligned on the machine before setup. (correct)

The IP and VPN must be aligned on the VM before setup. (incorrect)

Punctuation in Abbreviations, Acronyms, and Initialisms

Readers use punctuation and capitalization in abbreviations and acronyms in order to understand if it is a shortened terminology or an individual word. The importance of uniform punctuation helps the reader identify abbreviations in the text and avoid confusion when shortened versions can be used in alternative definitions or interpretations.

Punctuation in Abbreviations and Acronyms

Acronyms with three or more words should not include punctuation:

Examples: SaaS (correct)
S.A.A.S. (incorrect)

IBM (correct)
I.B.M. (incorrect)

Two-letter abbreviations should be spelled out when possible. If a shortened version is necessary, periods should be used between the two letters to indicate an initialism or acronym:

Examples: B.I. (correct)
BI (incorrect)

U.X. (correct)
UX (incorrect)

The ampersand (&) symbol is an acceptable replacement for the word ‘and’ in many acronyms. Unless otherwise directed by the product, ‘A’ should not be used as a replacement for ‘&’ in an abbreviation.

Examples: AT&T (correct)
ATT (incorrect)
ATAT (incorrect)

M&A (correct)
M.A. (incorrect)
MAA (incorrect)

Abbreviations should always be followed with a period in U.S. English documentation.

Examples:
Dr. Smith (correct)
Dr Smith (incorrect)

123 Main St. (correct)
123 Main St (incorrect)

If a sentence ends in an abbreviation or acronym that has a period, the sentence should only use one period. No sentence should end with double periods.

Examples:
The report is with I.T. (correct)
The report is with I.T..(incorrect)

Capitalization in Abbreviations and Acronyms

Acronyms and initialisms should be capitalized in all instances in nouns, pronouns, adjectives, adverbs, and verbs. Words that do not call into one of those categories can be capitalized if desired.

Examples:
SaaS (correct)
SAAS (incorrect)
saas (incorrect)

API (correct)
Api (incorrect)
Api (incorrect)

RAM (correct)
Ram (incorrect)
ram (incorrect)

For any other abbreviation, capitalize the first letter of the word then follow with lowercase letters.

Examples:
Corp (correct)
corp (incorrect)

tech (correct)
tech (incorrect)

5. Tone and Voice

By Evan Ortiz and Sandra Ford

Tone is the attitude that a speaker or writer uses to communicate towards the reader or listener and the subject of the message. As a technical communicator, “the overall tone of your written message affects your reader just as your tone of voice affects your listener in everyday exchanges" (Ober, 152). The purpose of technical writing is to communicate ideas in a clear and concise way, which is why tone is so important to maintain consistency of the format with which a technical communicator is using.

The “energy” of writing is conveyed through tone, which maintains the personality, attitude, and style of the writer and the message they want to deliver. The tone influences the reader on what the technical communicator’s position is on a certain topic, which consequently influences the reader on how they should feel about the topic (Moran, 2016). Technical communicators must be empathetic in their tone and voice in the message, since this will further emphasize what the audience wants to know or how they will be affected by what they are receiving.

According to Scott Ober in *Contemporary Business Communication*,

> The business writer should strive for an overall tone that is confident, courteous, and sincere; that uses emphasis and subordination appropriately; that contains nondiscriminatory language; that stresses the "you" attitude; and that is written at an appropriate level of difficulty. (152)

Developing and integrating different types of tone in different formats of technical communication is a skill that takes time to develop. Creating a confident tone in written or verbal forms of technical communication requires competency in the information that is being delivered in the message. Achieving a sincere tone in technical writing requires the avoidance of exaggeration, obvious flattery, and expressions of surprise and disbelief (Ober, 155). It is important to strike a balance between being informative and approachable, while also being respectful of the audience's knowledge and expertise.

Many technical communicators may struggle with recognizing the tone of voice in their own writing, or are convinced that the tone they are using is correct and does not need to be changed. Switching technical communicators into a receiving role of the message they are conveying can help them analyze their own writing to see if there are words or sentences that do not fit the

overall ideas that are important to the content. It is also important for technical communication to be analyzed from different perspectives to clarify and correct the tone in the message.

Although it is easier to control the tone of the message in verbal formats by using both verbal and nonverbal signals, writers can correctly convey their tone in messages through their confidence and sincerity. Furthermore, establishing the tone in technical communication allows the usage of emphasis and/or subordination to "ensure a common frame of reference between you and your reader" (Ober, 158). The art of persuasion through technical communication allows a writer and their audience to build rapport on a professional level to benefit the product of their collaboration.

Types of Tones Used in Technical Communication

There are broadly four different types of tone: humor, formality, respectfulness, and enthusiasm (Moran, 2016). In technical writing, it is preferred to stray away from using too much humor. Having a mix of formality, respectfulness, and enthusiasm are integral in making an engaging and professional piece of technical writing. A tone that is too formal or technical may alienate readers who are not familiar with the subject matter. In contrast, a tone that is too casual may not be taken seriously by those who are more knowledgeable about the topic.

The format that a technical communicator decides to communicate their information could also change the type of tone they use. Many people can reflect on how tone can be perceived in various ways through written formats, which further proves the importance of word choice and sentence structure to manage tone. A TED Talk or other spoken version of technical communication would need a friendlier and more enthusiastic tone, rather than relying on platitudes when delivering information. The inflection a communicator uses in spoken formats can change the tone and even change it to better fit the audience's needs. The format may also pertain to either internal or external communication, which will have a slight difference in the way a message comes across based on the type of tone that is used.

However, technical communication is usually delivered through written formats, which is why it is important to know how to use a formal tone to maintain professionalism. The tone of voice used in technical writing can still change depending on the audience the document is speaking to and the brand identity that is writing the technical document (Moran, 2016). For instance, a document written for a lay audience may use a more conversational tone. In contrast, a document written for experts in the field may be more technical and academic. In both cases however, the tone should remain formal and free of slang or colloquial language. This not only helps to maintain professionalism, but also ensures clarity and precision in the communication of technical information.

Example: "The analysis of the results shows that the surveyed population prefers Product One over Product Two and Three."

This example shows a professional and formal example of tone that would be used for professional settings, either in internal or external communication. This format is seen most in technical and progress reports.

Communicating with or for a company and establishing brand identity requires competent communicators to rely on their tone and language to maintain a professional relationship with those they are looking to collaborate with. By using the right tone and impartial language, "readers can focus their attention on *what* is being written without being offended by *how* it is written" (Ober, 161). Additionally, consistent use of tone throughout a document can contribute to a stronger brand identity as it conveys reliability and expertise in the field. Further research on word usage and terminology can help writers identify what is most appropriate for them to use in the right setting when communicating to an audience, especially when it comes to using company-specific terminology.

Context

The context of the audience is one of the first things that a technical writer must consider before writing a piece. The context includes information the technical communicators have to deliver, the format they will communicate through, and the audience they will deliver the information to. The analysis of these factors will help establish the most appropriate tone for the success of the piece. If a technical communicator is promoting a brand identity, taking into account the tone that is used within that company is necessary as well.

Technical communicators can accomplish this by providing relevant examples and scenarios to help the audience better understand the information being presented. It is important for technical communicators to use clear and concise language to avoid confusion and ensure that the audience can easily comprehend the information. They should also consider the needs and preferences of their audience, such as using plain language for non-technical readers or providing translations for non-native speakers. By taking these steps, technical communicators can effectively communicate and create products that are informative, engaging, and accessible to a wide range of audiences.

One way a technical communicator can engage with their audience is through product-reaction testing. Technical communicators can test what modes of communicating are best and try out various types of tones in those messages. This allows them to sample different types of tone to see what appeals most to their audience. It is important to remember that when one is communicating about a product, they must keep a consistent personality and profile. Their tone, however, can change to accommodate different topics or the audience's emotional states

(Moran, 2016). Using product-reaction testing is an effective way for technical communicators to examine the user base and determine their needs and interests in connection to the product.

Nonetheless, the reader's benefits are an important component of determining the tone and voice of the message that is being delivered. As Scott Ober states in *Contemporary Business Communication*, "sometimes, especially when asking a favor or refusing a request, the best we can do is to show how *someone* (not necessarily the reader) will benefit" (161). In situations where the message is a rejection or contains negative information, it is important for the technical communicators to de-emphasize the attention on the receiver of that message. Technical communicators can achieve this by "avoid[ing] second-person pronouns (*you* and *your*), and use passive sentences or other subordinating techniques to stress the receiver of the action rather than the doer" (Ober, 162). Although most technical communicators would use active over passive voice, using a passive voice is better in situations like those to set an appropriate tone for the message.

Interpreting the Audience

Understanding the social psychology of the audience can greatly benefit a technical communicator's ability to use the correct tone in their work. The key trait appearing in social psychology that is best applied to business and technical writing is defensiveness (Jameson, 2009). Defensiveness occurs frequently when a company creates a product from the perspective of a persuasive and direct technical communicator, rather than as an audience member or reader of the final product. When working in a group setting with other technical communicators, it is important to remember that defensiveness in a collaborative setting can be an impairment to creating an effective document that uses an appropriate and consistent tone.

As Daphne Jameson writes in *Management Consulting and Teaching: Lessons Learned Teaching Professionals To Control Tone in Writing,*

> Defensiveness escalated in a circular pattern as people responded to one another. When group members became defensive, they concentrated less on the substantive message than on planning their responses, which then engendered greater defensiveness in others. The more defensive people became, the more they distorted what they heard and the more they misperceived the motives, values, and emotions of others. When defensiveness decreased, conversely, groups let more members exert leadership, modified actions in response to legitimate influence, and ultimately produced more and better ideas (335).

Therefore, it is crucial for technical communicators to interpret their audience's needs and perspectives to avoid defensiveness and create an effective document that uses an appropriate and consistent tone. This can be achieved by conducting audience analysis, recognizing the social psychology of the audience, and empathizing with their needs and expectations. By doing so, technical communicators can establish a rapport with their audience, build trust, and effectively convey their message in a tone that is understandable, engaging, and professional.

Whether a technical communicator is working in a group setting or is trying to include the audience's perspective in their product, it is important that they develop a system to analyze what would fit best into their work. Technical writers must implement good communicative behaviors to create good-quality content whilst working with others. Daphne Jameson writes in their article about positive communicative behaviors that reduce defensiveness, including

> (a) description rather than evaluation, (b) problem orientation rather than control, (c) spontaneity rather than strategy, (d) empathy rather than neutrality toward others' feelings, (e) equality rather than superiority, and (f) provisional opinions rather than absolute certainty about debatable issues (337).

Overall, tone is a crucial component of effective technical communication, and technical communicators must be mindful of their tone and approach when creating content. Concentrating on creating a document that utilizes a provisional tone and problem-based approach can ensure an appropriate tone that avoids the bravado of undeniable certainty or the abrasiveness of an apathetic tone.

Formatting Tone in Different Settings

It is important for technical communicators to know how and when to vary their tone without having a dramatic difference within that variation. As Kate Moran states in *The Four Dimensions of Tone and Voice*, "you want to emphasize your chosen tonal qualities without making them dominate your writing to the extent that the content becomes excessive and stops communicating the underlying meaning in favor of pure style" (2016). Being able to balance a variety of tones in different settings is a necessary skill.

In face-to-face settings where a technical communicator is speaking to a business partner or an audience, it is important that they learn certain skills to improve and vary the type of tone they are using to best fit the scenario. Being an active listener and using positive nonverbal cues can ensure that the receiver feels important, which will cause reciprocative behavior when the technical communicator is speaking (Indeed Editorial Team, 2023). These skills can embellish

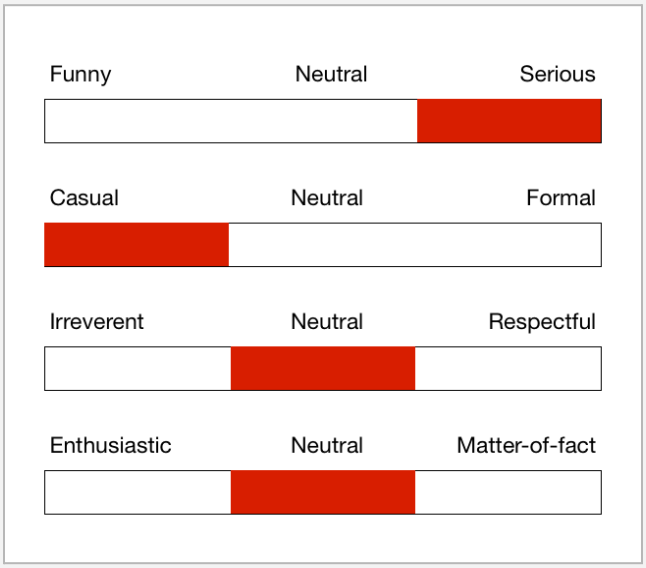
and certify the tone that a speaker is using since their body language and speaking both appear to be professional and respectful.

Choosing the correct tone can be determined through different strategies like product-reaction testing on users. This strategy has users survey the same content in different tones of voice. By receiving the data of this survey, technical communicators can get a glimpse into their user's preferences and emotional reactions to the content they are being shown. This allows technical communicators to adjust their tone to better suit the reaction they want to achieve for their product or brand identity.

For example, there may be a scenario where a technical communicator is sending an internal message to the company employees about an error in the systems. Certain companies prefer to keep all internal and external communication equally formal, whereas other companies may prefer a more informal format to be used in internal communication. The different examples of tone in sample messages that they use for this scenario is being tested on a 3-scale level based on the four tones of voice that are most prominently used. This example of a product-reaction test may look similar to what is presented below.

Example:

Tone profile #1: We're sorry, but we're experiencing some problems on our end right now! We'll let you know when the server is up and operating again.



Tone profile #2: There are technical difficulties occurring at the moment. We will update you when the server is fully operational.

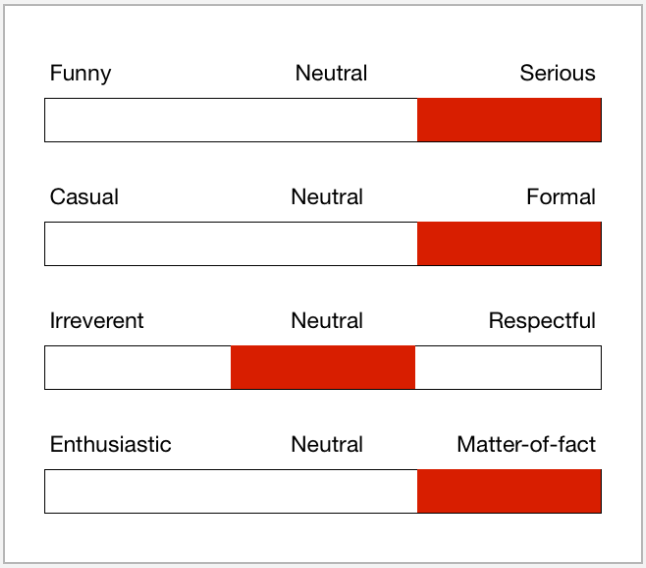


Figure 1. Tone Profile Ratings
These images are an example of how a user may rate the different messages based on the four major tones of voices present in writing. (Source: Kate Moran, *Tone-of-Voice Samples*)

Keeping a consistent personality is imperative, but there should always be room to "vary the tone to fit the user's emotional state and the topic" (Moran, 2016). Using positive language can help to build trust and establish a positive relationship between the technical communicator and the audience. It can also help to emphasize the benefits of a product or service, rather than focusing on its limitations or drawbacks. This is especially useful in settings between two companies that are in partnership with each other or are negotiating the possibility of one. Creating a tone that fits in with the rest of the content that is being produced by a technical communicator depends on the collaboration between the tone and the visual and interactive design of the product.

Tone in Internal and External Communication

Effective use of tone in internal and external communication relies on an understanding of the previous topics. In both internal and external communication, it is important to use positive language, avoid defensiveness, and focus on problem-solving and the benefits of the product or service. An email to a colleague will look vastly different from one to a client or business partner based on the audience and context of the message. Internal communication describes interactions between members of an organization or team and is essential to the exchange of information within a team to ensure smooth operations. It also helps to build trust, foster a positive work culture, and increase employee engagement and satisfaction.

Methods of internal communication include not only written communication like emails, but meetings and conversations as well. However, it is important to establish clear communication protocols and guidelines to ensure that messages are clear, concise, and timely. Additionally, regular feedback and evaluation can help to identify areas for improvement and ensure that internal communication remains effective and efficient. The Indeed Editorial Team identifies three types of internal communication:

- Vertical: flow of information up and down between managers and team members.
- Horizontal: flow of information within a team, typically between team members with roughly the same standing in the organization.
- Diagonal: exchange of information between separate teams or departments within an organization (2023).

Internal communication should be professional and respectful. Horizontal communication may be more casual than vertical and diagonal communication, which calls for a higher level of formality. The frequency and settings of when internal communication takes place may also affect what someone will be communicating about, which may fluctuate the tone to appropriately fit the context. By formatting the tone correctly, communicating in these different internal avenues will allow a more cohesive and amicable environment to work in.

External communication describes interactions between an organization and those outside of it. In external communication, technical communicators must take into account the needs and expectations of their audience to establish a rapport, build trust, and effectively convey their message. It covers a wide range of audiences, such as business partners and customers, and formats like marketing materials, press releases, social media, formal reports, and negotiations with partners (Indeed Editorial Team). External communication has a direct effect on an organization's public image, therefore a formal tone is critical. Ensuring that a message has a formal tone, but is not degrading or defensive, can best help a professional and long-term relationship to exist between business partners of different companies or between a company and their customer base. By interpreting the audience and having other perspectives analyze the message, technical communicators can format the correct tone that does not come across as demeaning or demanding.

Tone Best Practices

Overall, there are several best practices to use for tone in technical communication.

In technical communication, do:

- use a consistent tone throughout the entirety of the work

- consider the audience
- consider the context

In technical communication, do not:

- use an inconsistent tone
- use an inappropriate tone for the situation

Voice

Voice and tone go hand in hand, describing how readers and listeners "hear" and understand what a writer is trying to say (Wahlin). But while similar, tone and voice are not the same. Whereas tone describes the "energy" or attitude of the writing, voice captures the personality and intention of the writer—not in what they say, but how they say it. A strong voice can draw readers in and make them feel connected to the writer, while a weak or inconsistent voice can make a piece of writing feel disjointed or impersonal. Developing a strong voice takes practice and self-awareness, but it can be a powerful tool for creating engaging and memorable writing.

Voice is something that all writers and speakers possess naturally. In spoken mediums, it comes from the distinct inflections and speaking habits of the speaker to create the individual voice their listener hears. In writing, voice comes from the precise use of words, phrases, and grammar unique to each writer–their writing "style" (Stedman). Voice, however, can be purposefully and intentionally utilized in writing for many different reasons like emphasizing different parts of a sentence (active and passive voice), to invoke certain emotional reactions in the reader, and to give a more formal or informal impression.

By carefully selecting the right words and sentence structure, writers can create a unique voice that sets their work apart from others. For example, a writer may use a more formal tone when writing a business report, while using a more casual tone in a personal blog post. Additionally, the use of active voice can make writing more engaging and dynamic, while passive voice can be used to shift the focus onto the object of the sentence. Ultimately, the use of voice in writing is a powerful tool that can be used to convey meaning, evoke emotion, and connect with readers on a deeper level.

Voice serves to guide the reader through a piece of writing and keep them engaged. This is especially important in technical writing where the content of a piece can be especially dense. A guiding voice can keep readers from getting confused. According to Kyle Stedman's *Writing Commons* article on voice, "voice [is] the quality of writing that gives readers the impression that they are hearing a real person, not a machine" (Stedman). Technical writers often misperceive that their writing should be as objective as possible by removing their distinct voice from the

piece. However, voice brings humanity to a piece of writing by removing some of the distance between the writer and the reader, in turn making the content easier to understand. Additionally, incorporating active voice and varying sentence structure can help keep the reader engaged and interested in the content. By carefully crafting the voice in technical writing, the writer can effectively communicate their message and ensure that the reader is able to comprehend the information being presented.

Active and Passive Voice

Active and passive voice differ primarily on what is emphasized in a sentence. Active voice places emphasis on the subject (an active subject), while passive voice places emphasis on the action (a passive subject). Active voice is generally considered more direct and engaging, while passive voice can be seen as more indirect and less engaging.

Example:	**The students** wrote the report. (active voice) The report was written by **the students**. (passive voice)

In these examples, "students" is the subject, "wrote" and "was written" are the actions, and "report" is the object that the verb is being performed on. The first sentence is active voice because it places emphasis on the subject (the students), while the second sentence is passive voice because it de-emphasizes the subject while emphasizing the predicate (the report was written).

The active voice often makes up the bulk of technical and professional writing, but there are cases where the passive voice can be useful. For example, a writer may want to purposefully de-emphasize the subject when the subject is either implied, unknown, or irrelevant in the context of the sentence (Wahlin). The passive voice can also be used to create a more formal tone or to avoid assigning blame or responsibility. However, overuse of the passive voice can make writing sound vague, impersonal, and indirect, so it is important to use it judiciously and only when it serves a specific purpose. Additionally, when using the passive voice, it is important to ensure that the sentence is still clear and easy to understand.

Example:	The university was founded in 1963.

In this example, the subject (who founded the university) is irrelevant, and passive voice is appropriate to use.

The balance between the active and passive voices in a piece of writing is largely determined by the context of what the piece of writing is for. Writing styles that call for fewer personal pronouns—such as formal and scientific writing—will make frequent use of the passive voice.

The passive voice is often preferred because it emphasizes the results of an experiment or study rather than the individuals who conducted it. In these types of writing, the passive voice shifts the focus away from the person doing the action to focus on the action itself (Wahlin). In contrast, in creative writing or persuasive writing, the active voice is often used to convey a sense of immediacy and engagement with the reader. Ultimately, the choice between active and passive voice should be based on the purpose and desired effect of the writing, as well as the intended audience. A skilled writer will be able to use both voices effectively to achieve their desired effect.

Misuse of Passive Voice

One reason many writers avoid overusing the passive voice is to prevent issues of confusion, complexity, and lack of clarity in their writing. These obstacles often arise because of the passive voice's reliance on "to be" verbs over more precise verbs (Wahlin). These problems can be detrimental in technical writing when combined with specialized jargon and terminology or complex steps the reader needs to follow.

Additionally, using the passive voice can create unnecessary complex sentence structures, making the writing harder to understand. Finally, the passive voice can contribute to a lack of clarity in writing by obscuring the relationships between different parts of a sentence. By using the active voice more frequently, writers can help ensure that their writing is clear, concise, and easy to understand.

Misuse of the passive voice can often be signaled by nominalizations. Leah Wahlin's *Fundamentals of Engineering Technical Communications* defines nominalization as, "turning a verb into a noun—essentially describing an action as a thing," (Wahlin). While nominalizations are often grammatically correct, they can make sentences difficult to follow for the reader, making them overly wordy and dense.

Active Voice	Passive Voice	AVOID: Passive Voice with Nominalization
The team verified the contents of the lab kit. (or "I verified…" in 1st person)	The contents of the lab kit were verified.	A verification of the lab kit contents was carried out.
The team member removed the insulation with a wire stripper. (or "I removed…" in 1st person)	The insulation was removed with a wire stripper.	Removal of the insulation was completed using a wire stripper.

Figure 2. Active Voice, Passive Voice, and Nominalization Table
This table gives examples of how to rewrite sentences to avoid unnecessary nominalizations and misuse of the passive voice. (Source: Leah Wahlin, *Fundamentals of Engineering Technical Communications*)

Personal and Impersonal Voice

Most forms of technical writing tend to call for an impersonal formal voice. This voice typically utilizes the third person, avoids personal pronouns (I, we, you, she, he, etc.), and makes a precise use of the passive voice (Wahlin). In doing so, an impersonal voice de-emphasizes the actors in a sentence—and in turn the larger piece—and emphasizes the actions, which lends itself to technical writing's focus on data and information. Impersonal voice also avoids use of contractions, rhetorical questions, phrasal verbs, and colloquialisms.

A personal, informal voice still has a place in technical writing, however. Personal voice is useful in internal communication like emails and external communication where the writer wants to appeal more personally to the reader, like in social media or websites. Personal voice allows the piece to feel more relatable and approachable to the reader. The personal voice uses first person (I and we) and second person (you) pronouns (Wahlin), thus putting emphasis back on the actor with less use of the passive voice.

Example: Several models were considered for how to best improve the product. (impersonal voice)
Our team considered several models for how to bring you the best product possible. (personal voice)

Often, voice in technical writing will not be completely formal or informal, but rather find a balance between the two, fully utilizing complex ideas and a stylistic, engaging voice. By doing so, technical writers ensure that their content comes across clearly to the reader while also keeping them engaged. When discussing the differences in voice between student blogs and academic papers Stedman states:

> You paid less attention to details when you were blogging, sure, but your voices were there. You used sentences that sounded like you! They were *resonant*! I was *moved*! Do you hear the *italics* in my voice? That's how good your writing was! So don't lose that by putting on a new coat of formality when it doesn't fit well!
>
> (Stedman)

Voice is often intuitive in informal personal writing, such as blogs in Stedman's article, where technical writers feel they have more permission to write like themselves. In formal impersonal writing, however, it can be more difficult to craft a distinct yet technical voice. While a certain distance between the writer and the piece may be called for in certain types of technical writing—like scientific writing and formal reports—voice can be utilized to pull in readers emotionally and has an important place in formal writing. As Stedman suggests, formal writing can still move readers.

Voice Best Practices

Overall, there are several best practices to use for voice in technical communication.

In technical communication, do:

- maintain consistency by utilizing the same voice formatting throughout the entirety of the work
- consider the importance of the types of voice

In technical communication, do not:

- use different types of voices in the same piece of writing
- use nominalizations

Conclusion

Technical communication involves conveying complex information to a specific audience. Therefore, it is crucial to use the appropriate tone and voice to ensure that the message is clear, concise, and easily understandable. The tone and voice used in technical communication should be professional, objective, and authoritative. This helps to establish credibility and trust with the audience. Additionally, using a consistent tone and voice throughout the communication helps to maintain the reader's attention and focus on the message being conveyed. By honing in on the correct tone and voice usage, technical communicators can effectively communicate their ideas and information to their intended audience.

The tone supports the readability and layout of the entire document to ensure that a reader can easily navigate and flow through the document. This allows technical communicators to create a cohesive and engaging piece of writing that effectively conveys information. They can accomplish this by using a consistent tone and voice throughout the entirety of the work, considering the audience and context, and avoiding inappropriate or inconsistent tones and voices.

Technical communicators can establish an appropriate tone in their products by following company guidelines and specifications. They can also have other employees analyze the product to make sure that the tone does not come off as defensive or pretentious, but rather formal and respectful. It is also a good skill to use an empathetic tone to make the audience comfortable and empathetic as well.

Using the appropriate voice to fit the tone of a product is another essential skill a technical communicator needs. Understanding the difference between active and passive voice, as well as personal and impersonal voice, and knowing when to appropriately use each is essential for technical communicators to know as they produce work for their company or audience. A distinct, guiding voice can help prevent confusion and lack of clarity in technical writing while also keeping readers engaged. By utilizing these tools, technical communicators will further emphasize their attitude and tone in the entire document more clearly to readers.

6. Writing for Social Media

By Alexandra Ridge

The internet has evolved from its initial conception and with its continued growth it has brought new means of communicating. Social media has become an ever-popular source of communication with not only friends and family but businesses and potential consumers. While we generally tend to associate social media with sites like Facebook and Twitter it is so much more. Social media is simply the interactive technologies that facilitate the creation and sharing of information, ideas, interests, and other forms of expression through virtual communities and networks. With social media navigating all over the world, it has become a crucial tool for technical communicators to utilize.

Importance of Social Media in Technical Communication

The advent of social media has brought forth new ways for technical communicators to expose their work as well as provide the means to connect with their users and provide them direct support. In Laura Katajitso's conference on implementing social media in technical communication, she says this direct support lets "the users get more precise aid in their tasks faster than before, and perhaps even the feeling that their voice is heard by the company that manufactures the product" (Katajisto). This helps lead to more business for the company and more opportunities for the technical communicator.

The rise in popularity of social media has provided new job opportunities as many businesses are becoming more present on various social media outlets. Therefore, they are adapting their manuals and style guides to be more accessible via the Internet. Some businesses are now utilizing technical communicators to answer questions from users on question and answer sites such as Quora and WikiAnswers to give users a straightforward answer in a timely manner.

Social Media Etiquette

As with anything shared with the public, there are many common etiquettes to follow when posting on social media. These general guidelines of what to do and not to do on social media are so important they actually have their own term called "netiquette". Below are some of the most important rules to follow when utilizing social media as a technical communicator representing a brand.

- Know the audience. As with writing a style guide or manual, make sure to think of the audience the post is trying to reach and plan posts and responses accordingly.
- Be transparent. When posting, make sure anything said is truthful. Users respect brands and the people representing them more when they continually tell the truth. As an example, if a mistake is made and incorrect information was given out, own up to it and correct the information.
- Be positive. As with any writing, watch the tone. Keep posts and answers to users positive and clear. Do not become reactive or defensive in comments as that could turn users away from the brand.
- Keep posts short and sweet. Keep posts and responses simple. Many users are going to skip over a post or response if it drags on too long.
- Proofread. When posting anything, be mindful of appropriate spelling and grammar as well as punctuation. Reread all posts and responses before posting to ensure there are no mistakes.
- Be consistent. Users like to see consistency from the companies and brands they support. Make sure to maintain the overall brand image in all posts and responses as it is a reflection of the company. (Refer back to the section on *Brand Identity* for more information.)
- Maintain a schedule. Posts should be made regularly to keep users active in the brand. The easiest way to do that is to set up posts on a schedule across the social media platforms being utilized. Responses to users should also be given in a timely manner as increased interaction brings users back to the brand consistently.
- Share valuable content. Don't post just to post. Be mindful of the content being shared and make sure it is relevant and quality information.
- Use appealing visual content. Visual content is key in social media. Posts with visuals tend to get more viewer attention than posts with just text. Spice up posts with an image to draw viewer attention, but make sure it's relevant to the post and appealing.
- Give credit where credit is due. Any information that is provided or images being used from an outside source needs to be credited. Also, be aware of copyrights and utilize appropriate sources. This protects against lawsuits.
- Don't bash the competition. This ties into being positive and honest as well as keeping the brand image. It is never acceptable to bash the competition in a post or comment. This generally leaves a bad taste in the user's mouth and may result in them no longer supporting the brand.

- Carefully use hashtags. Hashtags are a very common trend in social media platforms but they can very easily be overused. When using them, keep them to a minimum and only use them when relevant. Do not use spaces, punctuation, or a large amount of words in your hashtags. See Figure 1 below for a small guide on the appropriate amount of hashtags to use per social media site.

Suggested Number of Hashtags per Social Site/Per Post	
Twitter	1-2 (or up to 5)
Facebook	No more than 2
Instagram	As many as you can (in the comments too!)
Google+	2-4 (place at the bottom of the post)
Pinterest	2-3 (in your Pin description only)
Tumblr	As many as you can
LinkedIn	Sparingly at this point, 1-2

Figure 1. Suggested Number of Hashtags per Social Site/Per Post
This table shows the suggested number of hashtags one should include in their posts on a variety of social media websites. (Source: Sheree Johnson, Ten Do's and Don'ts for Using #Hashtags for Businesses)

Writing for Social Media Platforms

With the vast variety of social media sites people now have access to, there comes different guidelines and expectations for technical communicators when writing across these platforms. It is not always necessary to utilize every possible social media platform to reach the target audience. Carrie Marshall posits:

> It's all in the demographics…. If you're promoting products to the widest possible audience, Facebook may be your new best friend. You don't have to be on every conceivable social network to get results, and it's often better to focus your efforts on a small number of platforms.

One thing to consider before deciding which social media platform to use is to define a social media voice. Not all "voices" are appropriate across all social media platforms. For example, it wouldn't be appropriate to use a humorous voice on LinkedIn as that platform is more professional than one such as TikTok. Figure 2 below is a helpful tool to utilize when deciding

on how a technical communicator would like to sound on social media as this voice will establish a social media personality. As such, technical communicators need to make sure that the voice chosen when writing on social media reflects the brand identity of the company they are writing for. See Brand Identity for more information on what that could look like.

Figure 2. Defining a Social Media Voice
This Venn Diagram from CoSchedule Blog is a great resource to utilize when deciding on how a technical communicator would like to appear via social media. (Source: Ben Sailer, Learn How to Write For Social Media to Create the Best Posts)

In this section, there will be overviews on how to write for a few of the most popular social media sites utilized by technical communicators.

Facebook

According to the research done by Mahnoor Sheikh, Facebook continues to be the top social media site worldwide with "roughly 2.96 billion monthly users," as well as being the, "most-used platform by marketers worldwide (93%)" (Sheikh). Given this information it is clear that Facebook, at this point in time, is one of the best platforms for technical communicators to reach intended audiences.

One of the best opportunities a technical writer can utilize on Facebook is the Facebook Pages. These pages are intended for businesses to use to interact with potential and current clientele. They hold much of the important information needed for users to have access to the business, leave and read reviews, ask questions, and follow posts made by said business.

The most important thing when representing a brand or business on social media as a technical communicator is accuracy. With that in mind, the first thing that should be completed when

using Facebook Pages is the “about” section which is typically one of the first places a prospective customer will go. This section gives users the important information they require such as: business information (founding, mission, story, etc.), business hours (if applicable), contact information, website, physical location, products, what kind of business it is, etc. See figure 3 for an example of a typical Facebook Pages about section. With this information filled in with current and complete information, it gives users a starting point to interacting with the company.

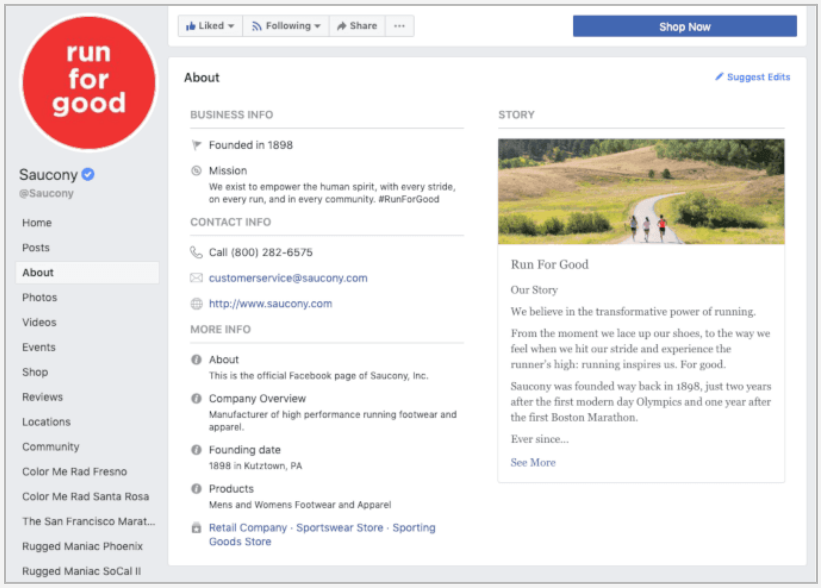


Figure 3. Saucony’s Facebook About Section
This shows a clear example of what a well written business “about” page looks like. (Source: Ben Sailer, Facebook Marketing Strategy: How to Plan the Best One in 8 Steps)

With a successful business Facebook page comes customer reviews. Many users look at reviews to determine whether or not they plan on supporting a business with their money. Therefore it is important to respond to reviews, good or bad, and respond appropriately. Here are a few tips to keep in mind when responding to reviews:

- **Keep responses short and simple.** Users will lose interest if they have to read an extensive response by the company. Cookie cutter responses can also look poorly on a company as it can make the user feel like they are interacting with a robot instead of a real member of the company.
- **Watch the tone.** If a response to a review is defensive or negative, this can turn users off of the company. Keep responses positive and polite.
- **Do not be afraid to admit mistakes.** Users respond well when companies own up to their mistakes and apologize.

As with many social media sites, studies have been conducted to determine the best time to make a social media post when traffic on the site is the highest. A study done by CoSchedule concluded that “The best times to post on Facebook are 9:00 AM, 7:00 AM, and 10:00 AM on Friday, Wednesday, and Monday” (Ellering). These times should be kept in mind when crafting a Facebook post. There are a few different kinds of Facebook posts that can be utilized by technical communicators: Text, Photo/Video, and Link.

Most businesses/brands no longer utilize posts with only text as site statistics have shown that posts with images or videos consistently get higher views as they draw more attention. Facebook, unlike other sites, does not have a character limit but it should be kept in mind that any posts over 400 characters will be shortened, prompting users to have to hit “see more” to continue reading past the 400 character mark. Text posts can be a great way to get a story out there as long as it is interesting enough to hold a user’s attention past the “see more” mark. Businesses that have successfully utilized long text posts typically add a single photo to draw attention to the post so users are incentivized to read a longer than normal post. Animal shelters are often seen successfully utilizing this method to introduce an animal that is up for adoption, such as the example below (Fig. 4). This type of post is a great way to show off technical writing skills while also giving users a little more than the standard shorter posts. It should be noted that doing long posts daily is not advised as users typically prefer a post they can quickly read and react to.

Figure 4 Suncoast Animal League Facebook Post - Skye the Terrier Mix

This is an example of a successful Facebook post that utilizes writing past the 400 character mark as well as adding a picture to draw attention. (Source: Suncoast Animal League, Facebook.com)

Photo and video posts are the most common posts made on Facebook. Pictures and videos are proven to draw more users as they grab their attention. Make sure when posting a video or photos that they are relevant to the business and audience, and that they are interesting enough to users. Also, when captioning these posts, be sure to keep it simple. It should grab a user's attention, as well as follow the social media voice that was decided on writing for the brand. A great example of this is the announcement of new Jurassic Park LEGO sets (Fig. 5) from the Jurassic World Facebook page. They included beautifully planned photos, not just stock photos of the LEGO boxes, with a cleverly crafted one sentence caption illustrating the purpose of the photos.

Figure 4. Jurassic World Facebook Post - LEGO
This is an example of a successful Facebook photo post from the official Jurassic World account. (Source: Jurassic World, Facebook.com)

Link posts are great ways to share relevant articles either about your business or directly from your business. As with most other social media posts, keep the captions for the link short and direct without just rewriting the article headline. On Facebook, links will show as an image (from the article itself) with the article headline so using the headline as the caption will look redundant and lazy. A good example of this is a recent post from IGN (Imagine Games Network)

covering the name debut of the newest Pokemon series based on the games Scarlet and Violet series. The post, shown in Fig. 6 below, gave users more information than the article headline as well as an incentive to open and read the article. The key to link posts is to get the user to read the article. Therefore, it is important for the caption to have enough substance to draw the user in while giving them a reason to open the article and read more.

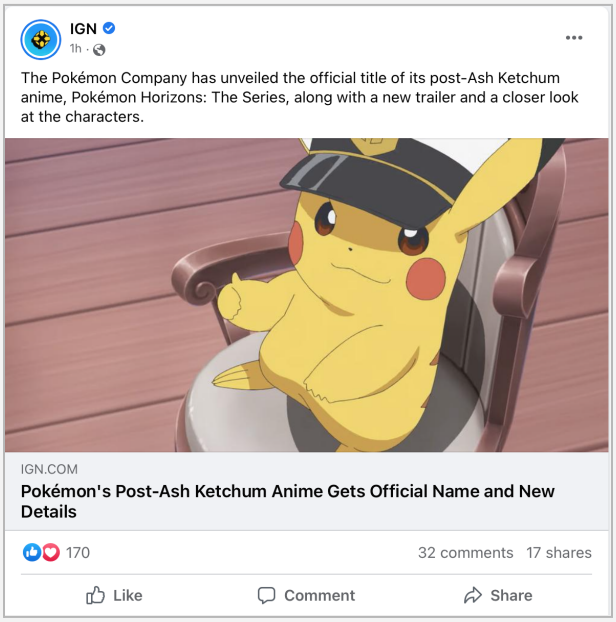


Figure 6: IGN Facebook Post - Pokemon Horizons: The Series
This is an example of a successful Facebook link post from IGN. (Source: IGN, Facebook.com)

Facebook posts with emojis and/or hashtags are generally used with a photo post. Emojis and hashtags can also draw a user's attention to a post, although they are used less on Facebook and more on Twitter. When adding emojis to a post, it is best to only use a couple instead of bombarding a post with them. In the example below (Fig. 7) from the popular children's show, Bluey, they use two emojis, a stack of books and a cloud, to reiterate their caption of story time before "Sleepytime," which is the title to one of their episodes. This post was made on March 2nd, which is World Book Day, so the stack of books' emoji ties in with the World Book Day theme as well as the image of Mum having story time with Bingo. The cloud is used to allude to the Sleepytime episode title as clouds are generally associated with sleeping.

Along with the emojis, they also included two hashtags which are used as tags on posts so that when users search specific words in the search bar, posts with those words in hashtags will be shown to the user. This post utilized the hashtags, #Bluey and #WorldBookDay. That means any users who search Bluey or World Book Day would find this post in their search results. Including one or two specific hashtags it keeps the post clean as well as easier for the user to find.

Figure 5. Bluey Facebook Post - Sleepytime
This is an example of a successful Facebook photo post that utilizes both emojis and hashtags in a meaningful context. (Source: Bluey, Facebook.com)

Another thing to keep in mind when posting to Facebook is to not use overly promotional phrases. Facebook can be a great way for businesses to let users know about upcoming promotions and sales but the Facebook algorithm can detect overly promotional trigger words such as “Buy now!” or “Sign up here now!” and will demote your post so it may not reach as many users in their newsfeed.

Twitter

Twitter is yet another popular social media website that technical writers can utilize. According to the research done by Mahnoor Sheikh, “Twitter boasts about 556 million monthly active users in total worldwide” (Sheikh). While this is significantly less than Facebook, it is still one of the top social media sites used today. As a top social media site, the team at CoSchedule analyzed posts made on the site and determined “The best times to post on Twitter are 10:00 AM, 9:00 AM, and 12:00 PM on Wednesday, Friday, and Thursday” (Ellering). Keep these days and times in mind when planning posts.

Twitter was well known for its 140 character limit, but in 2017 they doubled that limit to 280, which is still a significantly smaller character limit than most other social media sites. With these smaller character limits comes the challenge of attracting users with a limited amount of words. While it is important to stick to your chosen brand voice, Twitter is the perfect platform to utilize a little humor or lighthearted sarcasm in posts.

The use of hashtags is very important on Twitter as the top trending topics, meaning popular and widely talked about, are shown on the homepage for users to easily click their desired tag and view all posts using that hashtag. Refer back to Figure 1 for a guideline to the appropriate amount of hashtags for a Tweet. Target's account utilized both humor and hashtags for their Halloween post (Fig. 9) which was re-tweeted 97 times and prompted 218 user comments. These are relatively low numbers for a brand as large as Target but it gives an idea of what a regular everyday post could look like.

Figure 6. Target Halloween 2022 Tweet
This is an example of a tweet from the Target brand utilizing humor and hashtags to engage users on Twitter. (Source: Target, twitter.com)

As with Facebook, using images and/or GIFs on Twitter is a great way to engage with users and draw attention to a post. A GIF (Graphics Interchange Format) is simply an animated photo. These are used frequently on Twitter and, a lot of the time, are small scenes from a TV show or movie with subtitles to convey a feeling or expression, see Figure 9 below. Adding a GIF or a Meme (which is similar to a GIF but isn't animated) is a great way to add a little color or humor to a tweet as well as identify with the audience. Be sure to include a GIF/Meme that is related to the content of the tweet otherwise it would seem out of place. For example: the GIF below would pair well with a tweet about using a brand's identity in technical writing and would give a little humor to those who understand technical writing and/or enjoy the show *Schitt's Creek* and the character David Rose.

Figure 7. Schitt's Creek GIF
This is an example of a GIF from the popular TV show, *Schitt's Creek*. (Source: Schitt's Creek, tenor.com)

Using images to draw more attention to a tweet is as common on Twitter as it is on Facebook. Generally using one to four photos is best on Twitter as the images are not as easily clicked through if there are more than four unlike Facebook. So when selecting images to accompany a tweet, be selective. The goal is to add to the tweet, not take away from it. In Figure 10 below, Publix added four images from their recent Hunger Summit while using the tweet to explain what the Hunger Summit is as well as providing a link for users to learn more about what they do at the summit. This draws in users with images and the context behind them and helps lead them to want to learn more thus clicking on the link. The added use of a hashtag to make this post easier to find in searches as well as the green heart emoji (green being Publix's brand color) leading this post to almost 7000 user views. The more users view a post, the more likely they are to interact, talk about it, and even retweet it which helps reach even more users. The goal with social media posts is to reach as many users as possible encouraging brand interaction, so keep this in mind when crafting tweets.

Figure 8. Publix Hunger Summit Tweet
This is an example of a tweet from the grocery store chain, Publix, combining photos, a link, and hashtags to create a solid informational tweet which garnered over 6,000 views. (Source: Publix, twitter.com)

Twitter polls are fairly new and have become a great way to garner interactions with users. A brand can ask a question and give multiple response options to engage with users. Some fast food brands have used Twitter polls to ask which menu item users would like to see brought back and used the responses to create limited time specials or menu items which increases customer satisfaction and incentivizes them to interact with the business. Disney+ utilized a Twitter poll (Fig. 11) to help get users excited for the next episode of the popular show, *The Mandarlorian*. They asked a question regarding one of the main characters of the show to get people talking and see how well they were following the show ahead of the premiere of the next episode. This action resulted in over 5,000 user votes in the poll. These types of polls can also be a great way to get feedback from users. Technical communicators can ask what types of things they could improve on and have users vote to get valuable feedback. Facebook also has polls but they are not as popular as the ones on Twitter. Regardless, they are an excellent tool for technical communicators to utilize to receive user interactions.

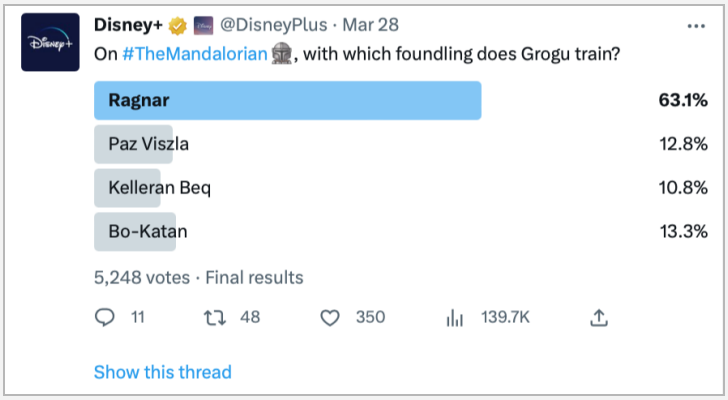


Figure 11: Mandalorian Twitter Poll
This is an example of how a Twitter poll can be used to interact with users on the platform and get them engaged. This particular poll asked a question about the show, The Mandalorian, and garnered 139.7k views and 5,248 users interacted with the poll. (Source: Disney+, twitter.com)

Twitter chats are not something that can just be selected when crafting a tweet but rather it is another way for technical communicators to encourage user engagement. Twitter chats can be started in many ways from the most obvious saying "let's chat about…." or it can be started in an interesting way such as the tweet below, Fig. 12, from Taco Bell telling users to comment their "toxic trait" and they would tell them what they should order from Taco Bell. The curiosity of what Taco Bell would recommend a user order based on something silly like a toxic trait can be intriguing to users and in this case it garnered Taco Bell's tweet 402 user comments and over 140k views. Another tactic used is starting a serious conversation or even an argument, such as asking a politically charged question such as, "Let's chat: do you think that guns should be banned in the United States?" This starts a conversation, or in most cases a debate, but still remains a good way to get a conversation started while bringing traction and attention to a brand's twitter. When deciding to start a Twitter chat be sure to consider the audience that is being targeted and avoid offensive questions that will bring negative attention to the brand.

Figure 9. Taco Bell's Toxic Traits Tweet
This is an example of a tweet that starts what is called a "Twitter chat" encouraging users to interact with a brand and receiving responses directly from them. Taco Bell in this Twitter chat used a little humor to engage with users. (Source: Taco Bell, twitter.com)

Pinning tweets is a way for brands to keep one tweet at the top of their Twitter page until they replace it with a new pinned tweet. This is particularly handy to keep a tweet of an upcoming promotion or event at the top for users to see. One could also pin a poll or a Twitter chat they'd like users to engage with so that it is the first thing a user sees when visiting their page. Pinning tweets is not necessary but can be a handy tool for technical communicators to highlight important tweets.

Question and Answer Sites

Question and Answer websites have been on the rise in recent years providing a great landscape for technical writers. These sites have users ask a question and anyone from anywhere in the world can answer the question. With the rise in these sites, and especially the invention of the site, Quora, opportunities for businesses to hire a technical writer to answer users questions in regards to their business has arisen. Quora has become one of the top used question and answer sites, and with its easy to access categories, has become a place where technical writers can focus on questions pertaining to the company they represent. For example, a user can log in to Quora and search for the company, Microsoft, who has their own profile on the site. The user could then go to the questions tab and either search to see if a user has already asked the question they have and receive an answer or, they can go ahead and submit a question. While any person with a Quora account can answer the user question, most companies are now hiring technical writers to monitor the questions they receive and answer them in an efficient way that reflects well on the company. As the very core of technical communication is being able to process information and write the information in a clear, concise, and multi-user friendly way, it is clear why technical writers using these sites to answer user questions is a great solution by the businesses.

As with any technical writing, the goal when answering a question on these sites is to give the user the answer in a way that the general public would understand. Do not over complicate the answer or add in specific jargon unless absolutely necessary. NitishRaj Pandey does a good job answering a user's question about their Microsoft product. Seen in the image below, Fig. 13, they simply explain why the user may be receiving that error message and then lists the simple and direct steps to fix the error while adding less likely means of fixing the error. The language used and the simplicity of the answer are how technical writers should attempt to answer user questions on these sites.

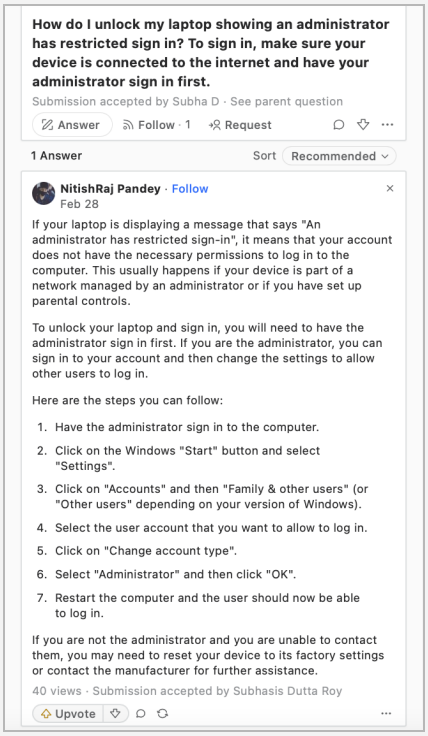


Figure 13: Question about a Microsoft Laptop by Subhasis Dutta Roy
This is an example of. (Source: Subha D.R and Pandey, N.R., Quora)

Avoiding Legal Risks

Anything that is written for the public comes with the opportunity for legal action. It is important to keep in mind when writing posts that every social media website has their own terms of service, privacy policies, and community standards. It is important, before creating an online presence on any social media site, to read through these terms and ensure they are fully understood and will be followed, otherwise there is a risk of being banned from said social media sites or risk legal action if certain social media laws or policies are broken.

There are also many common social media laws that exist to protect users and businesses across the social media platforms. It is important to be aware of these before posting as breaking any of these laws could lead to an unpleasant legal situation. Rudri Bhatt Patel from LegalZoom lists the social media laws to be aware of before posting as:

- Anti-SLAPP statutes provide remedies for the defense of frivolous lawsuits brought to deter the exercise of free speech.
- Americans With Disabilities Act prohibits discrimination based on disability.

- Communications Decency Act regulates indecency and obscenity in cyberspace.
- Computer Fraud and Abuse Act mirrors the common law tort of real property trespass into the virtual realm of computers.
- Copyright Act sets out exclusionary rights for works of authorship, and the Digital Millennium Copyright Act limits liability to service providers.
- Children's Online Privacy Protection Act (“COPPA") limits the collection of personal information of persons under 13 years of age.
- Electronic Communications Privacy Act (“ECPA") prohibits interception of “any wire, oral or electronic communication."
- Federal Trade Commission (“FTC") Act permits FTC investigation of unfair trade policies.
- Lanham Act provides protection for trademarks and service marks.
- The National Labor Relations Act guarantees the rights of employees to participate and engage in concerted activity for better conditions in the workplace.
- Stored Communications Act (“SCA") prevents entities from accessing and storing certain private information. (Patel)

Breaking any of these laws has serious consequences and can ruin the reputation of a brand/business. Execute social media posts carefully ensuring posts are mindful of these laws as well as avoiding copyright by crediting any source utilized. A great standard business practice is to look over these laws and how they pertain to social media and then create a business Social Media Policy, as many businesses utilize several different technical communicators to be in charge of making social media posts, this way everyone is on the same page as to what is allowed to be posted on social media which will help avoid unwanted situations.

A wonderful guideline to utilize before making a post on social media is from Keith A. Quesenberry’s book, *Social Media Strategy*, which has a technical communicator ask themselves a series of questions to help them avoid breaking any social media etiquette, ethical, and legal guidelines, shown below in Figure 10.

For social media etiquette to follow, refer back to the section on Social Media Etiquette. For more information on accessibility laws, refer back to the chapter on Accessibility. For more information on ethical considerations, refer to the chapter on Ethics.

SOCIAL MEDIA ETIQUETTE & ETHICS

Etiquette is the proper way to behave while **Ethics** studies ideas about good and bad behavior. Both combine into **Professionalism**, the skill, good judgment, and polite behavior expected from a person trained to do a job such as social media marketing. Because social media blurs the lines between our personal and professional lives it is useful to look at actions in social media from three perspectives: **Personal** (individual), **Professional** (employee) and **Brand** (organization). How do we navigate a social landscape where our worlds collide and brands communicate like people in one-on-one conversations with consumers? **Before taking any social media action consider these questions.** More here

	Personal Social Action (As An Individual)	Professional Social Action (As A Current/Perspective Employee)	Brand Social Action (As An Organization)
1.	**Is it all about me?** (Spend time complimenting not just boasting)	**Does it meet the Social Media Policy?** (Know/follow employer/client requirements)	**Does it speak to my target market?** (Meets their wants and needs not yours)
2.	**Am I stalking someone?** (Don't be too aggressive in outreach)	**Does it hurt my company's reputation?** (Personal accounts represent your employer)	**Does it add value?** (Make it educational, insightful, entertaining)
3.	**Am I spamming them?** (Don't make everything self-serving)	**Does it help my company's marketing?** (Be an advocate for your brand in social)	**Does it fit the social channel?** (Fit environment, mission, policies/standards)
4.	**Am I venting/ranting?** (Do not post negative comments or gossip)	**Would my boss be happy seeing it?** (Even private accounts are never fully private)	**It is authentic and transparent?** (Don't hide or exclude anything relevant)
5.	**Did I ask before I tagged?** (Check before you tag people in photos)	**Am I being open about who I work for?** (Be transparent about financial connections)	**Is it real and unique?** (Don't use auto responses, or spam)
6.	**Did I read before commenting/sharing?** (Don't jump to conclusions)	**Am I being fair and accurate?** Criticism is constructive backed by evidence)	**Is it positive and respectful?** (Don't badmouth the competition/customers)
7.	**Am I grateful and respectful?** (Respond and thank those who engage)	**Am I being respectful not malicious?** (Don't post what you wouldn't say in person)	**Does it meet codes of conduct?** (See WOMMA Code of Ethics, etc)
8.	**Is it the right place for the message?** (Some messages should be given in person)	**Does it respect intellectual property?** (Get permission to post brand/client content)	**Does it meet all laws and regulations?** (See FTC Social Guidelines, etc)
9.	**Am I in the right account?** (Don't post personal info. on brand accounts)	**Is this confidential information?** (Do not disclose non-public brand/client info.)	**Does it meet the Social Media Policy?** (Follow your own organization's standards)
10.		**Have I listened twice as much as I'm talking?** (We have two ears and one mouth for a reason)	

postcontrolmarketing.com/social-media-strategy-book

Figure 10. Social Media Etiquette and Ethics
This table makes a great resource to consider before making a post to a social media site. This allows the writer to ensure the post follows basic etiquette and ethics concerns and could help avoid unwanted consequences. (Source: Keith A. Quesenberry, Social Media Strategy)

Conclusion

As social media and technology continue to advance, it is important for technical communicators to continually ensure that they are up to date on all the sources they can utilize to get their writing and information out to people. Knowing how to write for some of the most popular social media sites will greatly help when searching for a job as a technical writer. The internet is ever-growing and expanding and it has become one of the best and fastest ways for people across the globe to communicate which leaves a demand for technical communicators in businesses around the world.

7. International Communication

By Diaminn Stephen

The topic of this chapter is international communication, which is a field of study that was created to meet the demand of increasing globalization. International communication plays a vital role in technical communication as it is what links people from around the world and allows them to communicate effectively with each other.

This chapter covers researching the audience, elements to consider like race and gender when writing for a specific audience, translations, language variation, culture-specific words, currencies, date, time, and number formats, reading order, internet availability and restrictions, visuals, localization, and a conclusion to recapitulate the essence of the chapter.

Researching and Knowing the Audience

International communication plays a vital role in how messages and media are translated all over the world. It is crucial for technical communicators to familiarize themselves with the audience in which they are directing their writing so they can successfully get their message across and meet the standards of that culture. There are many avenues that technical communicators can take to learn and refine their knowledge of their audience's cultural writing standards, such as: browsing the web for online resources, obtaining information from secondary sources like textbooks, dictionaries or encyclopedias, historical publications, and getting information from primary sources like first-hand accounts from people of that culture or those familiar with it. These techniques can be used to better appeal and accommodate to the technical communicator's intended audience.

Studying Culture

Technical communicators can also use research methods that Anthropologists use to expand their reach to other cultures. Specifically, cultural anthropologists focus on cultural variation, and utilize methods that include:

- Participant observation
- Cultural and key consultants

- Interviews

Participation Observation

According to Snover, this method of observation involves "observing the daily life of the culture and participating in daily life too," and "Anthropologists even learn the local language, so they can interact with the people every day" (Snover). Technical communicators can use this method by immersing themselves within their audience's culture to get direct personal exposure with the culture. This will aid the writer in establishing a credible relationship with their audience through their writing pieces to meet the cultural standards.

Cultural Consultants and Key Consultants

Technical communicators can go a step further in research by finding or hiring a cultural consultant, which is someone that can give insight about their culture. Cultural consultants can be from the country in which the technical communicator is writing for, or someone that is a certified organizational culture consultant that studies cultures for a living. These consultants can come in the form of translators or linguists and, according to Firsthand, "work with businesses and organizations to help them communicate effectively with others who are from different cultural and linguistic backgrounds…they help bridge both language and cultural barriers" (Firsthand).

Depending on what the technical communicator is writing, a more narrow and direct approach can be taken with a key consultant, who are experts in a certain aspect of a culture. For instance, if a technical communicator requires specific information about religion for a writing piece, Snover states that "a key consultant would be a priest or shaman, because they have more knowledge of religion than the other members of the community" (Snover). Utilizing key consultants will help technical communicators focus on particular aspects of their audience's culture when writing.

Interviews

Another approach for research can be to conduct interviews. This will allow technical communicators to accumulate data about the culture from various sources as the people they interview will offer different information depending on the questions asked. Interviews also open the door for technical communicators to get feedback and tips on elements of correct word utilization, spelling, tone, etc., to ensure they are adhering to the proper cultural writing standards.

Approaching Culture Study

As writing documentation varies, utilizing the most effective research approach to resonate with the audience is key. It's important for technical communicators to keep in mind what type of

writing piece they are performing so they can know the best way to approach their audience. Different cultural research approaches technical communicators can take include:

- Current cultural research
- Past cultural research
- Culture comparisons

Current Cultural Research

This form of research can be done by exploring up-to-date online articles, journal and news publications, conducting personal interviews with people of that particular culture, etc. For this research to be warranted, it has to relate to current information of that culture that the audience themselves will be familiar with.

For further information on cultural research methods, see Studying Culture.

Past Cultural Research

If past research needs to be conducted on a culture to get a better understanding for what needs to be written, technical communicators can utilize materials such as:

- Books
- Documents
- News publications
- Articles

These secondary sources can be obtained as physical or digital copies, for technical communicators to aid them in their research.

Culture Comparisons

Comparing cultures can also be an avenue of study that can be useful for certain writing scenarios. Snover mentions that “in this kind of research, the [technical communicator] is trying to figure out if two or more aspects of culture are consistently found together in different cultures, or not” (Snover).

Not only does this allow for the technical writer to expand their awareness on cultures and differences between them, but it also extends to their audiences too as they will be able to see similarities between words, phrases, ways of writing, etc. This will also allow for the technical

communicators to reach more than one audience and be more inclusive to targeted groups that have similar cultures.

Reputable Information

When conducting research on cultures to appeal to one's audience, it is important to validate where all the evidence is coming from – whether it be a primary or secondary resource – to ensure that the information will be wholly received by the audience in the most authentic and credible fashion.

Validating Primary Sources

If using a primary source like a key consultant, ensure that they are board certified and qualified and have in-depth knowledge in the specific culture of the audience the technical communicator is writing for.

When embarking on participation observations and interviews, guarantee that the people of that cultural community are natives and can offer personal insight and knowledge into their culture, as well as speak the language and know the writing standards to offer guidance to the technical communicator if needed.

Certify that when using translators or translating websites like Google Translate, that the translator is very well versed in the specified culture to know more than just the language, but the writing standards as well. Double check when using translating websites, like Google Translate, with professional translators or with natives of that language to ensure proper translation and avoid confusion from the audience.

Validating Secondary Resources

When evaluating secondary resources like articles, books, newspapers or magazines for validity, the technical communicator should adhere to common evaluation criteria that include, as the Brock University Library expressed, “purpose and intended audience, authority and credibility, accuracy and reliability, currency and timeliness, and objectivity or bias” (Brock University Library).

- Purpose and Intended Audience
    - What is the purpose of the source?
    - Who is the intended audience?
- Authority and Credibility
    - Who is the author?

    - What are the qualifications of the author?
    - Who is the publisher?
- Accuracy and Reliability
    - Is the information well researched?
- Currency and Timeliness
    - When was the information published?
    - Is current information required? If not, then accurate, yet historical, information may still be acceptable.
- Objectivity or Bias
    - Does the source contain opinions or facts?
    - Is the information presented in the source objective (unbiased) or subjective (biased)?
    - Does the information promote a political, religious, or social agenda?
    - Is advertising content (usually found in business magazines or newspapers) clearly [labeled]?

RADAR

Brock University also offers an alternative method for validating sources called RADAR, which was adapted from Mandalios:

- **Relevance:** How is this information relevant to [the] assignment?
- **Authority:** Who is the author? What makes this person or organization an authoritative source?
- **Date:** When was this information published and is the publication date important?
- **Accuracy:** Where are they getting their information from? Does it have citations and references? Are they using reputable sources or explaining how they gathered their data?
- **Reason for Writing:** Why did the author publish this information?

Considerations

Technical communicators should take into consideration that they are writing for global audiences, and sometimes targeted audiences every time they write. Remembering to write inclusively and not based on one's culture is crucial to ensure that cultural standards are being met, whether that be globally or specific.

Writing Inclusively

Ensure that phrases and sentences are constructed using plain language that can be widely understood by many despite cultural barriers. This can be achieved by using day-to-day vernacular and not jargon that may be difficult for other cultures to understand.

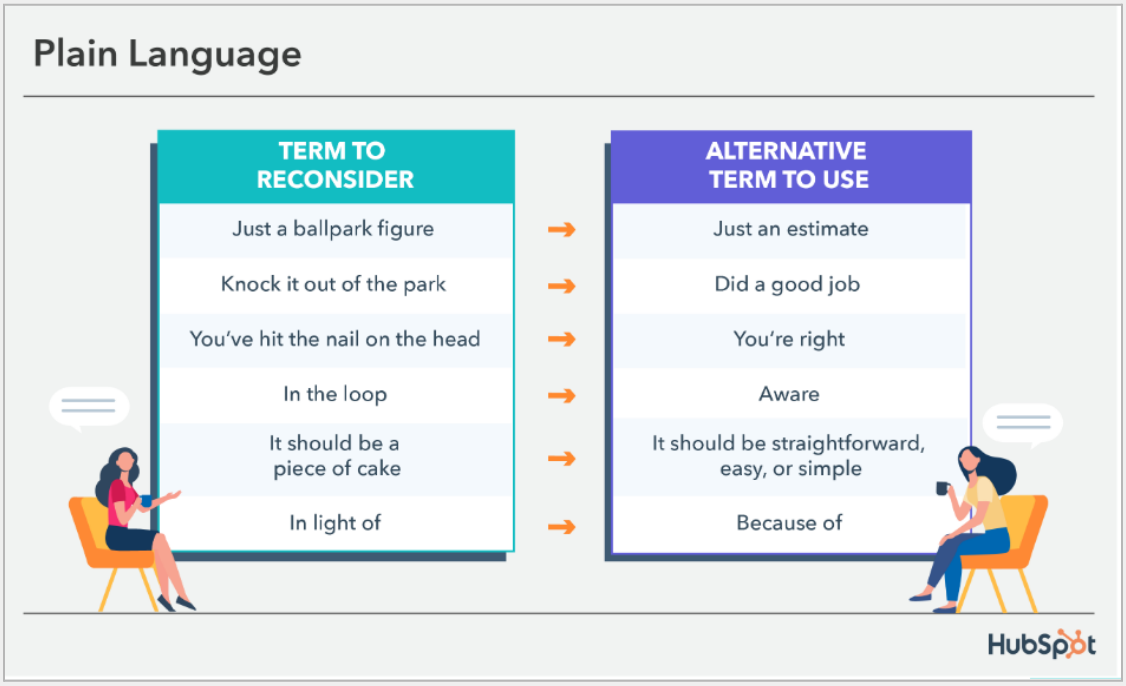


Figure 1. Plain Language Alternatives
This graphic displays examples of colloquial words and phrases that can be swapped out for plain language that is easier to understand. (Source: Forsey, Caroline. *Inclusive Language: How to Use and Promote It at Your Organization*.)

Complicated Words and Informal Language

Technical communicators should bear in mind not to use language that is informal and not commonly used in writing, as well as words or language that is restricted to a particular group of people. The technical communicators should anticipate a global audience from all different

types of social, economic, and working backgrounds and utilize simpler words and avoid pompous, fancy-sounding words. For example:

Avoid	Say
Desire	Want
Ensure	Make sure
Undertake	Try
Exhibit	Show

Diversity

Whenever partaking in inclusive writing, the technical communicator should consider diversity amongst their audience. Avoid potentially harmful and insensitive words or phrases by considering the audience's:

- Race, Ethnicity, and Nationality
- Gender

Race, Ethnicity, and Nationality

For writing scenarios in which the technical communicator needs to address a targeted group of people from a specific race, ethnicity, or nationality, it can be beneficial to utilize words, phrases, and terminology that is used within those groups to develop a closer relationship to the audience making them feel understood. However, using culture specific language and terminology with a targeted audience should be done with respect to the audience and their culture, in order to avoid using words that are rooted in racism or discrimination. As a result of this, it is important for technical communicators to educate themselves on words and phrases that are politically correct, and refrain from using words and phrases that are specific to a certain culture, as that can lead to confusion amongst audience members.

Demonstrated in the image below (Fig. 2) with the word "Guru", a title that is from Hindu and Buddhist culture, that means to be a spiritual guide to students and one that offers spiritual and philosophical insight about life and other matters. The term Guru may be taken out of context if the audience is not familiar with Hinduism and Buddhism, but if the audience was of Hindu or Buddhist culture, it would be received as intended. Thus, considering the audience's race, ethnicity, and nationality is important.

Technical communicators should make certain they do not single out or offend any group of people and should refrain from explicitly using racial and ethnic slurs and derogatory terms that pertain to a certain race, ethnic group, or nationality.

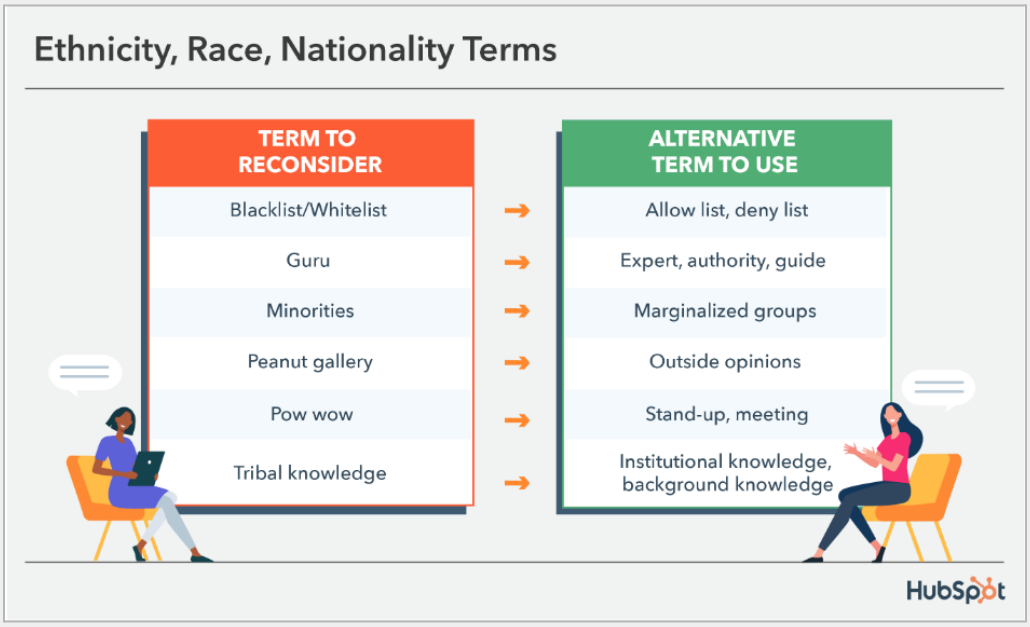


Figure 2. Ethnicity, Race, and Nationality Terms
This image displays examples of words commonly used that are related to ethnicity, race, nationality, and culture that can [be] easily swap[ed] out for more inclusive terms. (Source: Forsey, Caroline. *Inclusive Language: How to Use and Promote It at Your Organization*.)

Gender

When addressing an audience, the technical communicator must bear in mind that the audience is composed of people with different genders and pronouns. Therefore, adopting an unbiased way of writing when addressing audiences is essential. Using gender-neutral nouns like “person” rather than “man” or “humanity” instead of “mankind”, will still allow for technical communicators to get their point across.

The use of non-gendered pronouns should also be adopted. Technical communicators should avoid words like “male/female” and “he/she”, and instead use singular pronouns like “they/them/theirs”. This adds inclusivity as it includes the entire audience, despite what they might identify as, and it shows that the technical communicator is addressing everyone as a whole.

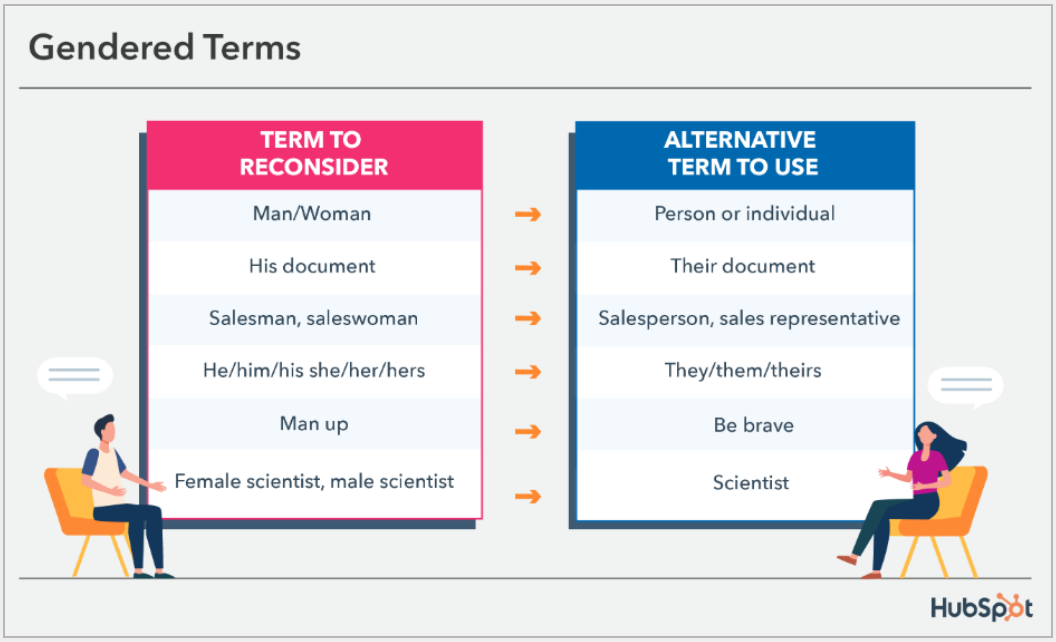


Figure 3. Gender-Neutral Terms
This image displays examples of gendered terms and alternative terms to use to be more inclusive when addressing an audience. (Source: Forsey, Caroline. *Inclusive Language: How to Use and Promote It at Your Organization*.)

Translations and Interpretations

As there are more than 7,100 languages spoken in the world today, providing information that can appeal to people all over the world can be challenging. Technical communicators should make a point to incorporate language translations for whatever writing piece they are creating, in order to ensure that it can involve many cultures.

Depending on the circumstance, implementing translated versions of documents or of other information, is important, as countries like the United States of America have many commonly spoken languages and a plethora of cultures. Technical communicators can utilize reputable translation sources such as Google Translate or even a cultural consultant that is familiar with the language that is being translated. It is important to ensure that sources being used are reputable and valid. Using an online translator application can also be used in conjunction with a cultural consultant to guarantee that not only the language is accurate, but the grammar, sentence structure, and the correct use of active voice is accurate as well.

Translate Day offers a list of “the [ten] best online translation tools recommended by senior and expert translators” (Translate Day) shown below.

1. Linguee
2. The Free Dictionary
3. ProZ
4. SDL Trados Studio
5. MemoQ
6. WordFast Pro
7. Fluency Now
8. Zanata
9. YouAlign
10. Memsource

For further information on validating sources, see Reputable Information.

Technical communicators should always anticipate to structure their sentences in an active voice when translating to another language, to make the sentences shorter, clearer, and easier to understand for the translator.

> **For example:** "The paper was published by the author." vs. "The author published the paper." **The second phrase is articulated in an active voice. This standard should be followed by technical communicators when translating information.**

Technical communicators should also familiarize themselves with the distinction between translation and interpretation. According to The Community Interpreter, "interpreting converts the meaning of the source language into the target language" (The Community Interpreter) and translating converts the source language into the target language. This variance can be seen in ways in which information is translated from a base language into a secondary language.The secondary language has a completely different meaning from the original base language.This is critical for technical communicators to implement as resonating with audiences of different cultural backgrounds is key.

The difference between translating and interpreting is explained in the table below, provided by The Community Interpreter:

Translating	Interpreting
“Rendering a written text from one language to another in writing.”	“Rendering a message orally, or in signed language, from one language into another.”

Interpreters can be utilized by technical communicators, as The Community Interpreter mentions, to “faithfully interpret for all parties without adding, omitting or changing the message” (The Community Interpreter), for any kind of information, whether it be written, digital, or orally relayed.

Language Variation

English is the most common spoken language in the world with around 1.5 billion speakers and is considered to be a dominant language. English is also the official language of sixty-seven countries and twenty-seven non-sovereign countries around the world. Although, all of those countries and non-sovereign nations speak English, the culture of each of those countries are completely different.

It is estimated that there are over 160 English dialects amongst the countries where English is the official language. According to Translate Day, “some of the most commonly spoken dialects of English include those from places like Australia, the US, UK, India, Kenya, Jamaica, and beyond” (Translate Day).

This does not only apply to language-variation, like changing the word “organization” to “organisation” or from “color” to “colour”, in order to appeal to United Kingdom English, but also to different vocabulary and grammar.

British English vs. American English Examples

Below are some examples that illustrate English language-variation between British and American English:

Spelling

As shown in the image below (Fig. 4) provided by Eštok, there are variations of spelling the same word. Although this particular example shows only British and American English, there are countries like Canada and Australia that follow British English standards.

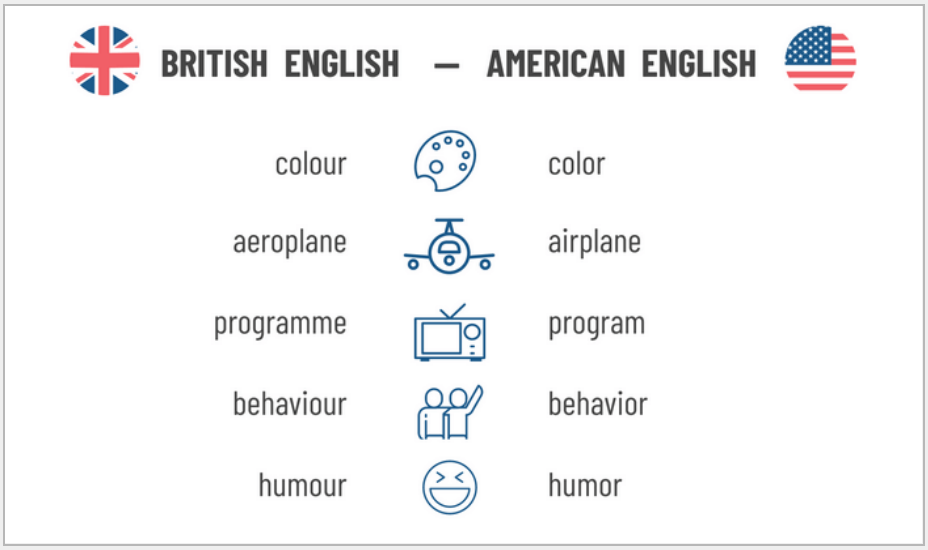


Figure 4. British vs. American English Spelling
This image displays a comparison between spelling variations of words commonly used in the English language. (Source: Eštok, Tomáš. *Differences Between British and American English*.)

There are also instances where these countries will offer two acceptable ways of spelling a word. For instance, in the United Kingdom, the American English word “realize” can be represented as “realise/ize”, which signifies that in the United Kingdom, “realize” and “realise” are both acceptable. Technical communicators should make themselves aware of these spelling standards to appeal their writing to the right culture.

Grammar

As shown in the image below (Fig. 5) provided by Eštok, grammar also changes when speaking English in a different country. Technical communicators should bear in mind to pay attention to both spelling and grammar when communicating with English-speaking audiences from different cultural backgrounds.

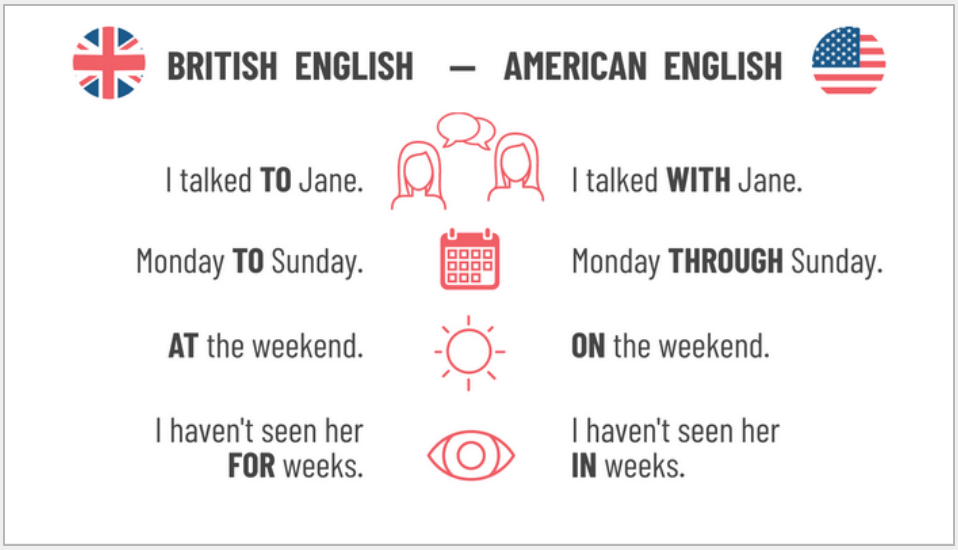


Figure 5. British vs. American Grammatical Differences
This image displays a comparison between grammatical differences in phrases commonly used in the English language. (Source: Eštok, Tomáš. *Differences Between British and American English*.)

Vocabulary

Another vital role in dialect and language variation is vocabulary, meaning words that are specific to a certain culture or words and phrases that have the same meaning but expressed differently. This phenomenon of differing vocabulary in the many English-speaking countries around the world, is very apparent and can be seen in many instances from single-word expressions to phrases.

To learn more about how vocabulary differs between English-speaking countries, see Culture-Specific Words for more in-depth information.

English Around the World

The image below (Fig. 6) provided by Translate Day, puts into perspective the amount of English dialects spoken in just England and Scotland.

Figure 6. Dialects of English in England and Scotland
This image displays a map of England and Scotland and the subdivision of cultural dialect. (Source: Translate Today. *How Many Different English Dialects Are There?*)

There are seven major dialect groups in England according to Translate Day: “Standard English ("the Queen’s English”), Northern, East Midlands, West Midlands, East Anglia, Southern, West Country and Highland English” (Translate Day) and three major dialect groups spoken in Scotland according to Translate Day: “Highland English, Lowland Scotish and Glaswegian” (Translate Day).

Note: These groups also contain sub-dialects, as visually expressed in the figure 6 image.

According to Translate Day, there are also estimated to be “[seven] main groups of Dialects in the United States: Western American English, North Central American English, Northern American English, Midland American English, Southern American English, New York City American English and Northern New England American English” (Translate Day). Translate Day

states that these “deviations between dialects exist on the basis of coasts and borders” (Translate Day) as visually expressed in the image below (Fig. 7), provided by Translate Day.

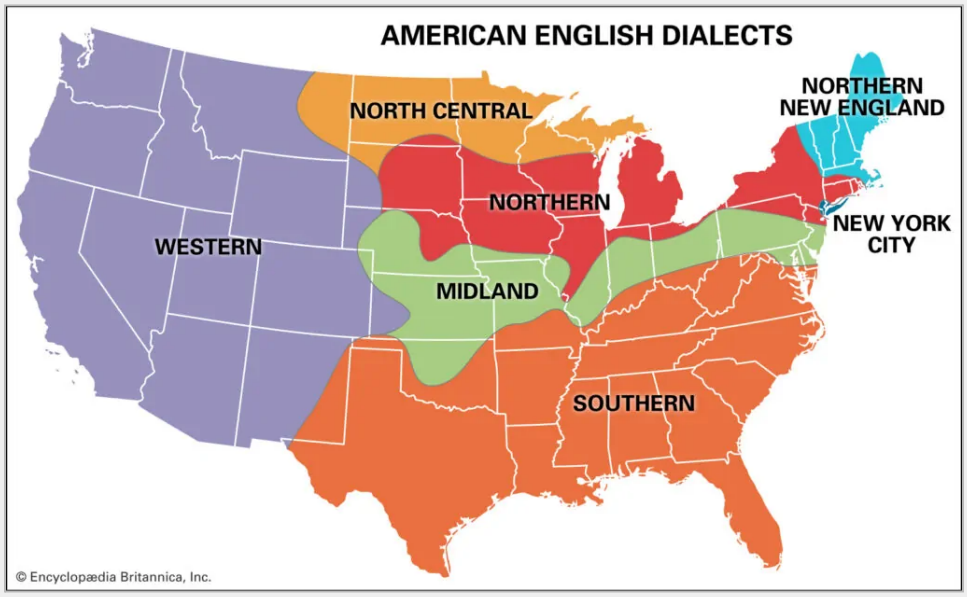


Figure 7. Dialects of English in the United States
This image displays a map of the United States and the subdivision of cultural dialect. (Source: Translate Today. *How Many Different English Dialects Are There?*)

Note: These groups also contain sub-dialects.

Technical communicators need to keep this in mind when producing information for an English-speaking audience as the technical communicator’s English may not be the same dialect as the audience’s English. The examples provided in this chapter only go over American English and British/UK English, but the same standards and expectations for technical communicators apply when dealing with other English dialects from around the world.

Culture-Specific Words

As discussed in the prior topic, Language Variation, countries can share the same language but have dissimilar ways of communicating through that same language. This also applies to culture-specific words, which are words that are specific to a certain culture. Employing culture-specific words in one’s writing can allow the technical communicator to be more relatable to their audience, while on the other hand, causing confusion if not used in the proper scenario.

The intended audience may be English-speaking, but the technical communicator needs to discern the cultural dialect in which this audience speaks in order to know the correct terminology to employ. This can appear in cases of knowing when to use words like “pram” instead of “stroller” when discussing baby transportation to a British or Jamaican English-speaking audience, as “pram” is the acceptable term in British English but not in American English.

Eštok provides an example of this, as an image shown below (Fig. 8), comparing the terminology difference between British and American English:

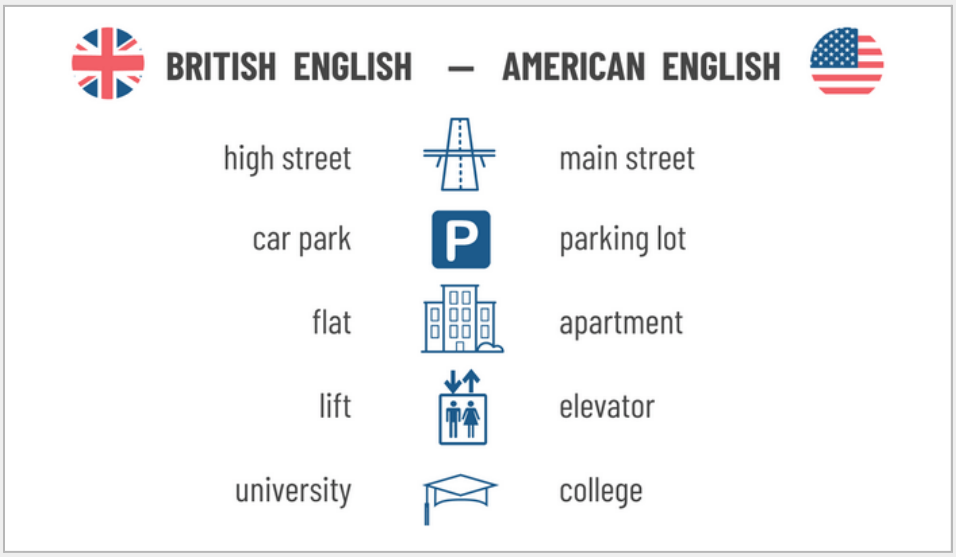


Figure 8. British vs. American English Lexical Differences
This image displays a comparison between vocabulary differences of words commonly used in the English language. (Source: Eštok, Tomáš. *Differences Between British and American English*.)

Recognizing which countries have been under a jurisdiction by other countries, e.g. British or French jurisdiction will also be beneficial in instances when having to figure out what type of English dialect to use. An example of this is Jamaica being under British jurisdiction in the past which in turn led them to adopting a British English dialect and form of communication.

In an essay titled “*A Call for International Recognition of Culture-Specific Words From the Middle East*,” Babaii et al. quotes that:

> Newmark (1988) divides culture-specific words into five groups: ecology, such as
>
> fauna, flora, seasons, local winds, hills, and plains; material culture, such as

> clothes, food, transport, communication and houses, and towns; social culture, such as work and leisure; customs, organizations, activities, procedures, and concepts related to political, religious, legal, artistic, social aspects; and habits and gestures (Babaii et al.).

Babaii et al. also quote from Larsen (1984) that "words pertaining to religious aspects are the most difficult, while words related to social and political relationships stand next, and only then come words related to material culture" (Babaii et al.).

Bearing this in mind, technical communicators should acquaint themselves with understanding copious amounts of aspects from their audience's culture, for cases in which appealing to a target audience is the purpose. In instances where there is no target audience and the technical communicator aims to be more inclusive, refraining from culture-specific words and phrases will be optimal.

Currencies

When representing currencies, technical communicators should consider if they are communicating to a targeted audience or a general audience. For general audiences, technical communicators should offer conversions and equivalents for currency values and symbols. For English-speaking audiences, the most commonly used currencies are said to be the US Dollar (USD), the Euro (EUR), and the Great British Pound (GBP), also referred to as the Pound Sterling.

It would be beneficial to implement these three monetary conversions when writing, so that the technical communicator can appeal to an English-speaking audience from various backgrounds. This will also allow for better understanding in terms of currency, considering that the US Dollar, Euro, and Great British Pound do not have the same value, as shown in Table 1 below, exhibiting the symbol representation and exchange rate between the three currencies.

Currency Conversion and Equivalent Chart

Currency	Symbol	Exchange Rate
US Dollar (USD)	$	1 USD = 0.93 EUR 1 USD = 0.82 GBP
Euro (EUR)	€	1 EUR = 1.08 USD 1 EUR = 0.88 GBP

Great British Pound (GBP)	£	1 GBP = 1.13 EUR 1 GBP = 1.22 USD

When communicating to a more direct audience, the country's respective currency and symbol representation should be used. The same rule should be applied when the writing is aimed at one country, but another country's currency is being referenced. The technical communicator should include the monetary equivalent of the referenced country's currency to the country's currency of the intended audience.

Verifying Currency Conversions

To ensure that currency conversions are accurate, technical communicators can search for valid currency converters to verify that the equivalents being used are up to date with the current economic worth of that currency. This can be done through either connecting with a key or cultural consultant, who can offer accurate knowledge about the economy of that country or by using sites like Google Finance, which offer the conversion between the two currencies, the exchange rate between the base currency and quote currency, and history about the two currencies, as shown below (Fig. 9) in an example image captured from Google Finance.

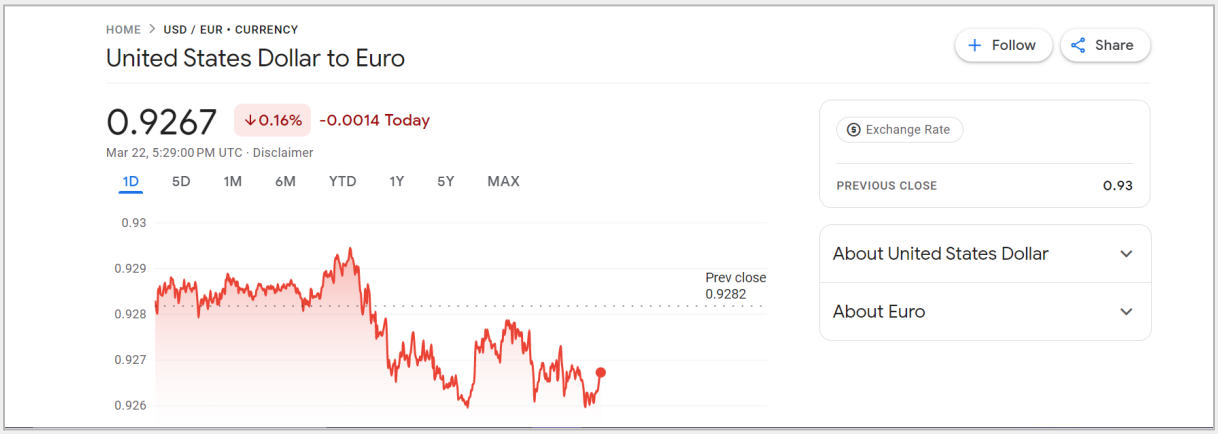


Figure 9. United States Dollar to Euro Conversion
This snapshot displays the conversion between USD to EUR. (Source: Google. *Google Finance*.)

For more information on how to validate sources, see Reputable Information.

Dates, Time, Seasons, Numbers, and Units of Measure

Numerical formatting and seasonal changes vary depending on the country. Some countries follow the same formatting standards while others do not. Technical communicators should educate themselves on numerical format representations, as well as how one should reference seasonal changes, and how they differ based on culture.

The three major numerical formats, along with seasonal changes, being:

- Dates, Time and Seasons
- Numbers
- Units of Measure

Dates, Time, and Seasons

Date formats around the world are generally represented in three ways:

- Majority of countries: dd/mm/yyyy
- China, Japan, Korea, Iran: yyyy/mm/dd
- United States of America: mm/dd/yyyy

A visual representation of this is shown in the image (Fig. 10) below, provided by MIT ISO:

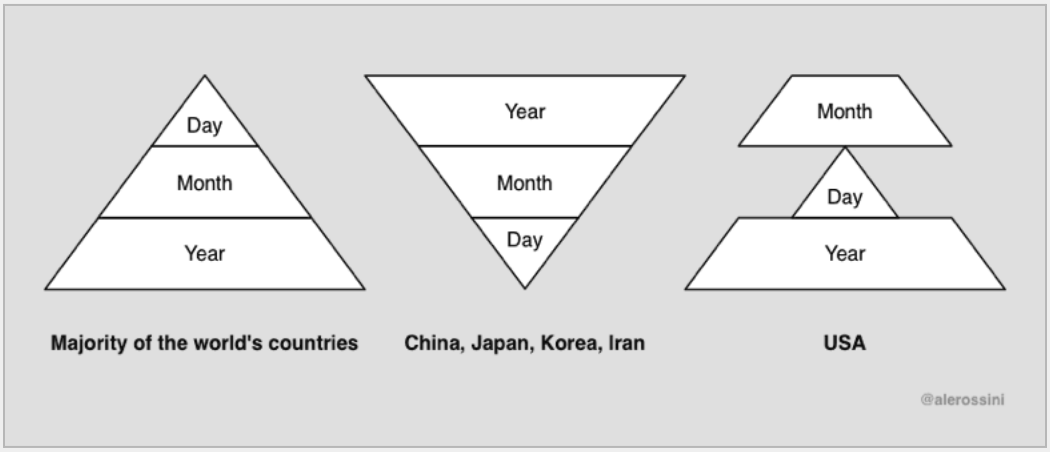


Figure 10. Date Formats Around the World

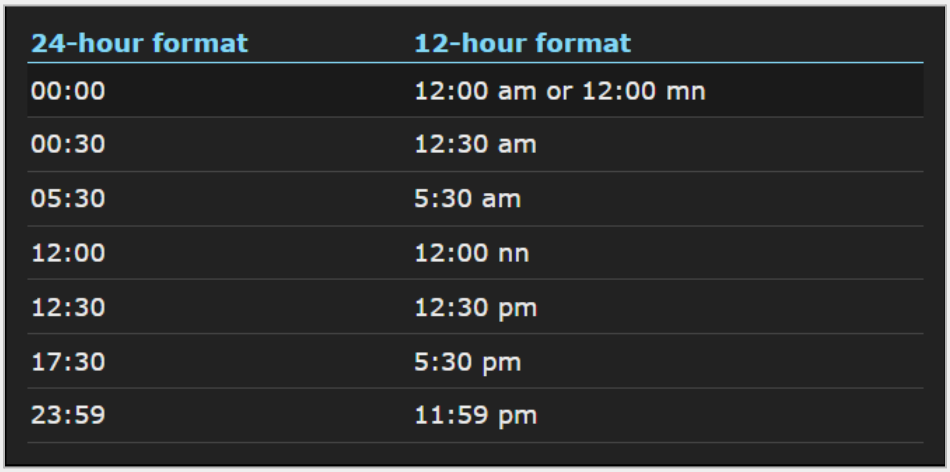
This image displays a comparison between how different countries format their dates. (Source: MIT ISO. *Date Format in the United States*.)

Note: Formatting dates with dots (dd.mm.yyyy) is also acceptable in Britain and some European countries.

Time around the world is represented in two ways:

- 24-hour format
- 12-hour format

This is visually expressed in the image (Fig. 11) below, provided by WorldData.info.



24-hour format	12-hour format
00:00	12:00 am or 12:00 mn
00:30	12:30 am
05:30	5:30 am
12:00	12:00 nn
12:30	12:30 pm
17:30	5:30 pm
23:59	11:59 pm

Figure 11. Time Formats
This image displays a comparison between the 24-hour and 12-hour time format. (Source: WorldData.info. *Writing Date and Time Formats*.)

The 24-hour format is the most widely used format to represent time around the world. It is important that technical communicators write the hour with two digits when using the 24-hour format in writing. The 12-hour system is used in most English speaking countries like the USA, Australia, and parts of Canada that speak English. Great Britain utilizes the 24-hour format like countries in Europe.

Some countries that utilize the 24-hour format omit the use of colons when separating the hour from the minute. Countries like Britain use the full stop, commonly known as dot, as Eštok explained below.

> Additionally, [the United States of America] use[s] colons when telling time, whereas the British often use the full stop. This means that in Britain[,] people may wake up at 8.00 and go to bed at 20.00, whereas in the US[,] they may get up at 8:00 AM and go to sleep at 8:00 PM. AM comes from the Latin phrase ante meridiem (before noon) and PM from the phrase post meridiem (after noon) (Eštok).

If utilizing the full stop or 24-hour format in writing, it is not necessary to include a.m. or p.m. because the time of day is already represented digitally and no numbers are being reused. The utilization of a.m. and p.m. is only necessary when implementing the 12-hour format in order to indicate what time of the day it is, as the digits between one and twelve are reused to represent the hour.

Seasons

As the months change, each of the four hemispheres experience weather and seasonal changes at different times in the year. Technical communicators should bear in mind to not use explicit terminology when referencing seasons. Being that seasons vary across the globe, it is in the technical communicator's best interest to use broad terminology, or to specifically reference the hemisphere or country that is being talked about to avoid confusion from the audience if they are unfamiliar with or not yet experiencing that season.

Example: Refrain from using season names like spring, summer, fall, winter. Instead, describe the weather with more general terms like warm, cold, snowing, hot, etc.

Numbers

It is best practice to write out numbers going from zero to one hundred in nontechnical writing, and keep numbers under ten numerical in technical writing.

Grammarly states:

> Scientific and technical journals, and even news reports, often adhere to the rule that only numbers less than ten should be written out in full, except when

fractions or decimals are involved. This can be a sensible approach to ensuring the readability of texts that refer to numbers and figures frequently (Grammarly).

With that in mind, technical communicators should adhere to writing out numbers under ten as it aligns to the style of writing that they will perform.

Example: Two of the nine participants chose group one.

There are more than 7 billion people on the planet.

Units of Measure

When representing units of measure, technical communicators should first familiarize themselves with which system to use based on the country their audience is from, as there are two systems used to measure units:

- Customary System
- Metric System

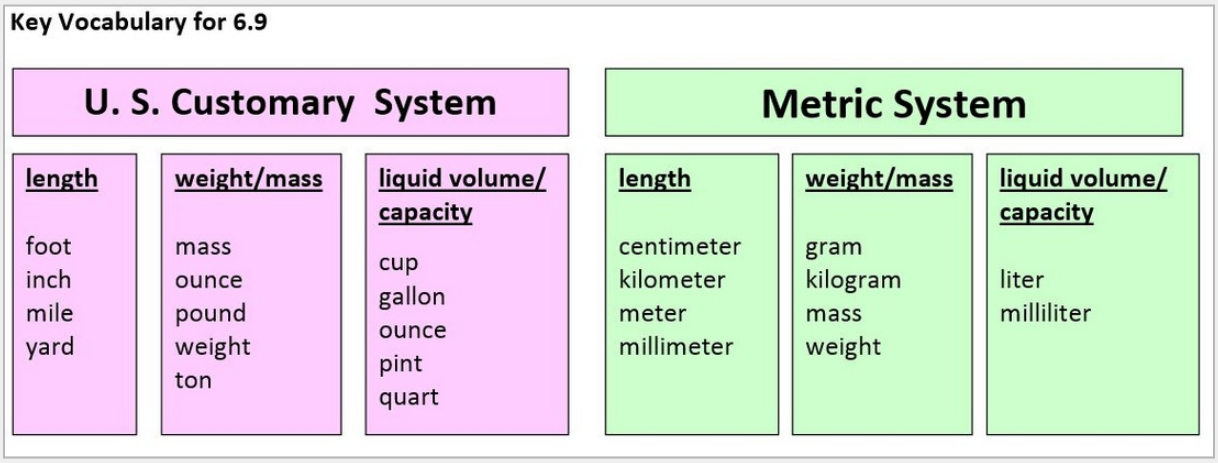


Figure 12. Customary vs. Metric System
This image displays a comparison between the basic units of measurements between the customary and metric system. (Source: Bull Run Middle School. *Compare the Customary and Metric Systems*.)

The image above (Fig. 12), provided by Bull Run Middle School, exhibits the two measuring systems used in the world and their respective terminologies to represent basic units of measure.

The United States of America is the only country in the world to adopt the Customary System. As every other country uses the Metric System, offering unit of measure equivalents between Customary and Metric should be implemented when writing to appeal to all audiences.

Reading Order

Most languages are written and read from left to right. However, some parts of the world read and write from right to left.

According to Andiamo, "here is a list of the main languages that use right to left scripts" (Andiamo):

- Arabic
- Aramaic
- Azeri
- Dhivehi/Maldivian
- Hebrew
- Kurdish (Sorani)
- Persian/Farsi
- Urdu

When offering full-text translations of these languages, technical communicators should also adjust the reading order to right to left to make it comprehensible to the audience as that is the standard for how those languages are written.

Internet Availability and Restrictions

Technical writing is used to provide easy to read and understandable content for subjects that require instruction or direction. As Malik states:

> "Common examples of technical writing are:
>
> 1. User Manuals

2. Software Installation Guides
3. Standard Operating Procedures (SOP)
4. API Documentation
5. Service Level Agreements (SLA)
6. Press Release
7. Case Studies & White Papers
8. Company Documents
9. Requests for Proposals
10. Annual Reports
11. Business Plans”

In this digital age, most writing information is accessed online. It can be challenging for countries with no internet access or censorship restrictions to access the important information that technical communicators are trying to offer.

According to Bleiberg and West, barriers to internet access include:

- Lack of interest
- Affordability
- User Capability
- Infrastructure (Bleiberg and West)

To combat this issue, technical communicators can make their content digital and physical when distributing their information around the world to allow for better availability to those without internet access. However, as this issue goes far beyond technical writing, as Bleiberg and West state, “nonprofits, governments, device manufactures, and service providers will need

to work together and innovate to tackle this pressing problem…[as] the Internet will only increase in its importance for commerce, education, and communication" (Bleiberg and West).

Visuals

The addition of visuals in technical writing is highly beneficial as it allows the audience to see what is being instructed upon. This can lead to better comprehension from the audience as some people are visual learners. In terms of appealing to international audiences through visuals, technical communicators should implement the utilization of closed-captions, as well as audio translations when conveying information through visual media, like videos in order to appeal to all languages.

Technical communicators can also make use of images that incorporate people of different ethnic backgrounds to make their work more diverse and inclusive.

Technical communicators should make note to always include images or visuals that are representative of everyone to as Betancourt states, avoid "perpetuat[ing] the inequalities of society…as this can negatively affect how [people] see [themselves] and [are] perceived if [they] don't fit into the narrow 'ideal' demographic that has been created for." This can then lead to symbolic annihilation, which is "the idea that if [one] [does not] see people like [themselves] in the media [they] consume, [they] must somehow be unimportant" (Martins).

Below (Fig. 13) is an example of an inclusive photo that includes people of different backgrounds, gender, and someone who is physically disabled:

Figure 13. Example of an Inclusive Photo
This image displays a diverse group of people, in terms of gender, race, and disabilities. (Source: Siegal, et al. *The 6 Essential Principles of Inclusive Marketing Every Marketer Should Know.*)

How to Choose Inclusive Photos

Betancourt lists guidelines on factors to take into consideration when choosing photos to remain inclusive, as presented below.

- Learn to recognize [one's] biases so [one] can work to interrupt them
- Always make a "Demographic Checklist"
- Ask [oneself] questions to keep bias[es] in check
- Use specific search terms and filters, and dig deep
- Pay close attention to photo composition, lighting and cropping
- Use diverse and inclusive stock photo websites
- Adopt an inclusive mindset (Betancourt)

Incorporating the right visuals will be crucial for technical communicators when conveying information to international audiences as it will allow them to make the people that have been marginalized or underrepresented, feel seen and heard.

Localization

As this chapter discusses writing for an international audience, there will be instances in which technical communicators need to appeal to a specific audience as mentioned lightly throughout certain topics. Localization is the process of making information local to a specific culture or desired population.

Smartling mentions that:

> localization looks at every aspect of [one's] content, including:

- Language
- Tone and message
- Imagery and color

- Date, time, measurement, and number formats
- User interface
- Payment method

Incorporating Localization

For localization to be incorporated in writing, internationalization needs to be addressed first. According to Smartling:

> [internationalization] often gets lumped into translation and localization.
>
> Essentially, internationalization is the process by which developers prepare
>
> [information] to support multiple languages and formats. Generally that means:
>
> - Separation of the UI elements from source code of content
> - Support for multiple languages
> - Written text supported in multiple formats like right-to-left, left-to-right, and vertical
> - Support for local, regional, and cultural preferences
> - Number formats and numeral systems
> - Sorting and presentation of lists
> - Handling of personal names and locations
> - Legal requirements on the back-end

Localization is a key part of international communication, and when used in conjunction with the other topics discussed in the chapter, technical communicators will be able to forge relationships with audiences all over the world and break through all barriers that countries may pose.

Conclusion

With the ever increasing demand and influence of globalization, international communication was designed to unlock the many barriers that disallowed countries from effectively communicating with one another, and allow countries to communicate and connect through

means of inclusive writing. When executed in the right way, technical communicators will be able to push through the various limitations that arise when communicating with international audiences. Whether it be by localizing information through means of translating and interpreting, or implementing country-specific words, phrases, and spelling to appeal to an intended audience. With the utilization of the topics within this chapter, technical communicators will be able to fuse nations together with their writing.

8. Visual Communication

By Ethan Sutherland and Linette Perez

Visual communication refers to the use of visuals—including images, graphs, charts, diagrams, videos, animations, and other visual aids—to convey information. In technical communication, this form of communication plays a crucial role in effectively conveying complex technical information to diverse audiences.

Understanding Visual Communication

Every company in existence uses visual communication to increase understanding of concepts. The main purpose of visual communication is to get messages across to people, inspire change, or evoke an emotion. There are two different types of visual communication:

- **Communication design**: It involves the crafting of a message that educates, motivates, and engages the viewer.
- **Graphic design**: It uses design principles to communicate clear, eye-catching messages to the audience.

Elements of Visual Communication

Both communication design and graphic design utilize different elements of visual communication. Some of those elements include the following individual graphics items:

- Position
- Color
- Size
- Shape
- Orientation

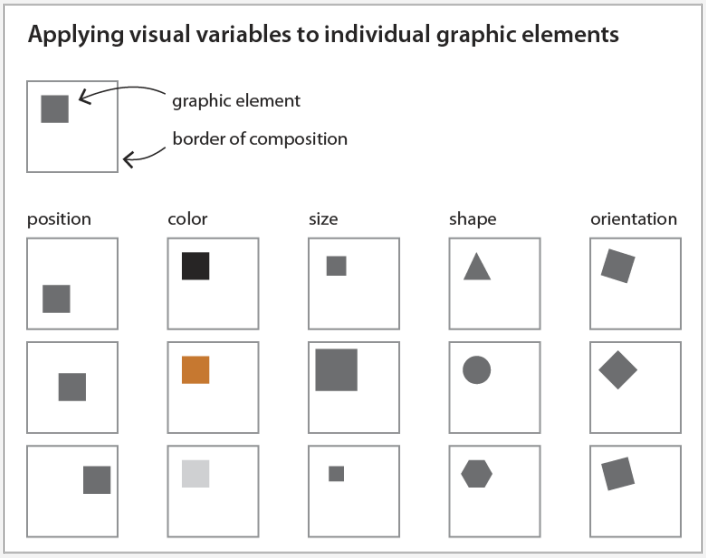


Figure 1. Applying Visual Variables to Individual Graphic Elements
This figure illustrates how to apply position, color, size, shape, and orientation to individual graphic elements. (Source: Clarkson)

Visual communication elements are also combined into compositions that are listed below.

- Contrast
- Repetition
- Alignment
- Proximity

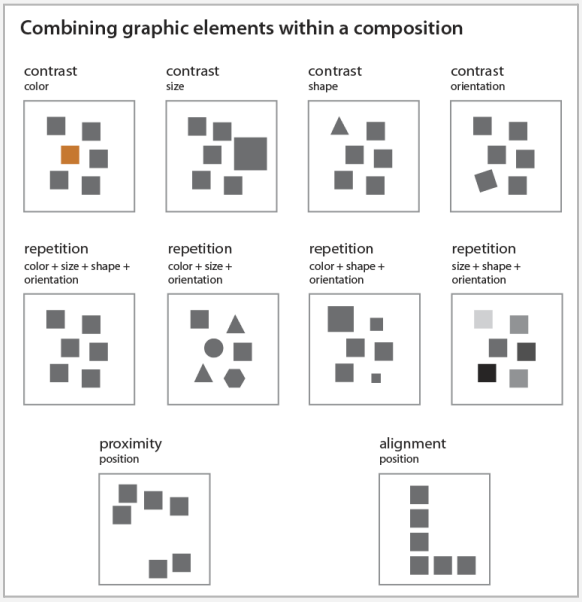


Figure 2. Combining Graphic Elements Within a Composition
This figure illustrates how to combine graphic elements into compositions. (Source: Clarkson)

While the elements are combined into different compositions to help the viewer understand information visually, the overall communication to the viewer is grouped into hierarchy, grouping, and sequence.

- **Hierarchy** is the dominant-subordinate relationship among elements.
- **Grouping** is the relationship that specifies the elements to be associated together.
- **Sequence** is the relationship among elements that specifies first, second, third, and so on.

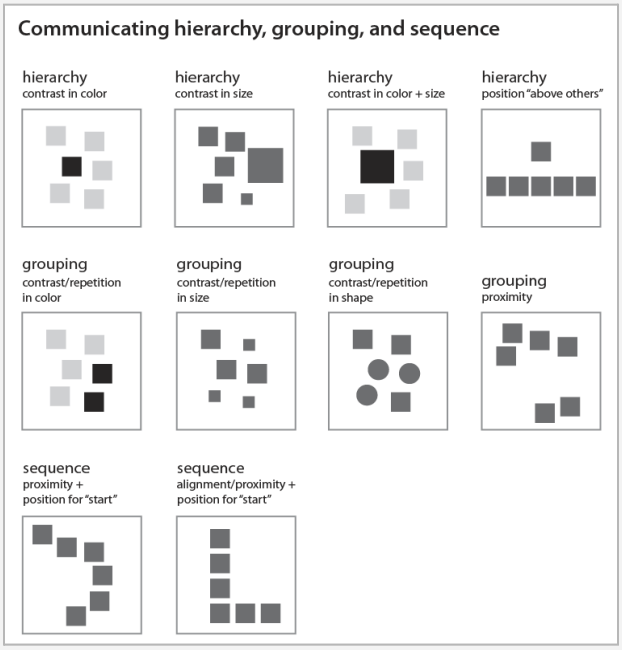


Figure 3. Communicating Hierarchy, Grouping, and Sequence
This figure illustrates how to communicate relationships among elements of a composition. (Source: Clarkson)

Types of Visual Communication

A visual method is not the only way to express visual communication to viewers. There are many different types of ways to express information, some of which are listed below.

- Infographics
- Diagrams
- Flow charts
- Charts and graphs
- Visual reports
- Presentations
- Videos

Each one has their own way of demonstrating information that could help the viewer or reader. Using any data visualization like infographics, charts, or graphs helps show what impacts that work could have on users. Using some symbols and icons in presentations, visual reports, or videos could make information more memorable for the viewers. Each method should be chosen based on which format can best deliver the information. If not, then viewers or readers may not clearly understand what is trying to be communicated.

Audience Considerations

Having the right method and meaning is important to viewers. A company can not just write whatever it wants. A company must think about factors to communicate. Some would include culture, accessibility, and user experience (UX).

- **Cultural factors** are sets of values and ideologies of a particular community or group of individuals.

  > **Examples:** Language and personal beliefs are two types of cultural factors.

- **Accessibility factors** include making sure people with disabilities, including speech, auditory, and vision, can understand, navigate, and possibly interact well enough.
- **UX factors** are the processes of designing and creating visual interfaces that are both effective and appealing to users.

Importance of Visual Communication in Technical Communication

Visual communication is important because it is a way of passing any and all information without using any words to viewers. It is more direct and helps retain readers' attention by breaking up large paragraphs. Having images around text can help readers understand the content that's trying to be explained better than having lengthy textual passages with no visuals.. Visual communication also allows the audience to see things in different perspectives with images rather than words. It is also beneficial for those who are visual learners.

Planning Visual Communication

Planning is an essential part of visual communication because it helps ensure that the message being conveyed is clear, effective, and impactful. Planning allows designers and communicators to define the purpose and objectives of their visual communication, identify their target audience, and determine the best way to deliver their message.

Effective planning also involves considering the visual elements that will be used to convey the message, such as typography, color, composition, and imagery. By carefully selecting and arranging these elements, communicators can create a visual hierarchy that guides the viewer's attention and reinforces the message being conveyed.

In addition, planning helps communicators anticipate potential challenges or limitations that may impact the effectiveness of their visual communication. For example, if the communication is intended for a global audience, the designer must take into consideration language barriers, cultural differences, and varying levels of visual literacy.

Overall, the purpose of planning in visual communication is to ensure that the message is clear, effective, and impactful, while also taking into consideration the needs and preferences of the intended audience. By doing so, designers and communicators can create visual communication that resonates with viewers and achieves its intended goals.

Purpose of Creating Visual Communication

To Persuade

Visual communication can be a powerful tool for persuasion, as it can engage and influence the audience in ways that other forms of communication cannot. Some tips for using visual communication to persuade are listed below.

- **Identify the Audience:** Before creating any visual communication, it is essential to understand the audience's demographics, interests, and values. This knowledge will help technical communicators create visuals that resonate with the audience and increase the chances of persuading them.
- **Use Visual Metaphors:** Metaphors are a powerful tool in visual communication as they can help simplify complex ideas and make them more relatable to the audience. Using a visual metaphor can make the viewer more receptive to the idea one is trying to convey and can make the message more memorable.
- **Use Colors Strategically:** Colors can elicit emotional responses from viewers, so it is essential to use them strategically in visual communication. For example, using warm colors like red, orange, or yellow can create a sense of urgency or excitement, while cool colors like blue or green can create a sense of calmness or trust.
- **Use Storytelling:** Visual storytelling can be an effective way to persuade the audience by creating an emotional connection with them. By telling a story through the visuals, technical communicators can help the audience relate to the message and make it more memorable.
- **Use Data Visualization:** If a technical communicator wants to persuade the audience with data, using data visualization can make it easier for them to understand and remember the information. Use charts, graphs, and infographics to present the data in a visually appealing way (Nediger, *What is Data Visualization?*).

The key to using visual communication to persuade is to understand the audience, create visuals that resonate with them, and present the message in a compelling way.

To Instruct

Visual communication can be an effective tool for instructing or teaching as it can help simplify complex concepts and make instructions easier to understand. Some tips for using visual communication to instruct are listed below.

- **Use Clear and Simple Visuals:** When creating visual communication for instructional purposes, it is important to use clear and simple visuals that are easy to understand. Avoid cluttered or complicated visuals that can confuse the viewer and detract from the message one is trying to convey.
- **Use Step-By-Step Visuals:** If a technical communicator is providing instructions that require a series of steps, using a step-by-step visual can help make the process more manageable and easier to follow. Use arrows, numbers, or other visual cues to guide the viewer through each step of the process.
- **Use Infographics:** Infographics can be an effective way to present complex information in a visually appealing and easy-to-understand format. Use charts, graphs, or other visual elements to convey information in a clear and concise way.
- **Use Color and Contrast:** Using color and contrast can help draw the viewer's attention to important information and make it easier to understand. Use color to highlight key points or to differentiate between different sections of the visual communication.
- **Use Animations or Videos:** Animations or videos can be a powerful tool for instructing as they can help demonstrate complex concepts or processes in a dynamic and engaging way. Use animations or videos to supplement the visual communication and provide additional context or detail.

To Inform

Visual communication can be a powerful tool for informing and educating an audience about a particular topic or subject. Some tips for using visual communication to inform are listed below.

- **Define the Message:** Before creating any visual communication, it is important to define the message one wants to convey. This will help ensure that the visual communication is clear, concise, and effective.
- **Use Clear and Simple Visuals:** When creating visual communication for informative purposes, it is important to use clear and simple visuals that are easy to understand. Avoid cluttered or complicated visuals that can detract from the message one is trying to convey.
- **Use Data Visualization:** If a technical communicator is presenting data or statistics, using data visualization can make it easier for the viewer to understand and remember

the information. Use charts, graphs, or infographics to present the data in a visually appealing and easy-to-understand format.

- **Use Visuals to Reinforce The Message:** Use visuals to reinforce the message one is trying to convey. For example, if a technical communicator is discussing the importance of recycling, they should use visuals of people recycling to reinforce this message.
- **Use Color and Contrast:** Using color and contrast can help draw the viewer's attention to important information and make it easier to understand. Use color to highlight key points or to differentiate between different sections of the visual communication.

Identifying the Audience and Their Needs

Identifying the audience and their needs is a critical step in creating effective visual communication. Some steps technical communicators can take to identify the audience and their needs are listed below.

1. **Conduct Research:** Conduct research on the target audience to gain a better understanding of their demographics, interests, and behaviors. This can include reviewing data such as age, gender, income, education, and geographic location.
2. **Analyze the Situation:** Analyze the situation in which the visual communication will be presented. Consider factors such as the purpose of the communication, the setting in which it will be presented, and the context in which it will be received.
3. **Define the Audience's Needs:** Once one has a better understanding of the audience and the situation, define their needs. What are they looking for? What information do they need to know? What are their pain points or challenges?
4. **Develop Personas:** Develop personas that represent different segments of the audience. These personas can help the technical communicator better understand the needs and behaviors of the target audience and can guide the creation of visual communication.
5. **Test and Iterate:** Once the visual communication is developed, test it with the target audience to ensure that it meets their needs and is effective in conveying the intended message. Iterate and make changes based on feedback.

Choosing the Appropriate Visual Format

Choosing the appropriate visual format for the audience is critical to the success of visual communication. Some tips for choosing the right format based on the needs of the audience are listed below.

- **Consider the Message:** The most important factor in choosing the appropriate visual format is to consider the message one wants to convey. Different formats are better suited for different types of messages. For example, a chart or graph may be more

appropriate for conveying numerical data, while a photograph may be better for conveying emotions or experiences.

- **Consider the Audience:** The needs and preferences of a technical communicator's audience also plays a role in choosing the appropriate visual format. For example, if the audience is primarily visual learners, a format that relies heavily on imagery, such as an infographic or video, may be more effective.
- **Consider the Platform:** The platform on which the visual communication will be presented is also important. Different formats may be more appropriate for different platforms. For example, a short video may be better suited for social media platforms like TikTok or Instagram, while a longer video may be better suited for YouTube.
- **Consider Accessibility:** It is important to choose a format that is accessible to all members of the audience. For example, if one has a hearing-impaired audience member, a video without captions may not be effective. Be sure to choose a format that is inclusive and accessible to all.
- **Consider the Resources:** Consider the resources available, since some formats may require more time, effort, or resources to create. The technical communicator should consider budget and time constraints when choosing the appropriate visual format.

Creating Visual Communication

There are many different tools and techniques for creating visuals. Some companies prefer digital art, while others prefer hand-drawn illustrations. Regardless of the medium, it is done the way the company prefers. When a company creates visuals, they use appropriate colors, fonts, images, and more to match what they are advertising.

Take, for example, Samsung and Google. Each has their own way of creating visuals for their company. They make imagery that stands out, but at the same time, is easy for people to recognize.

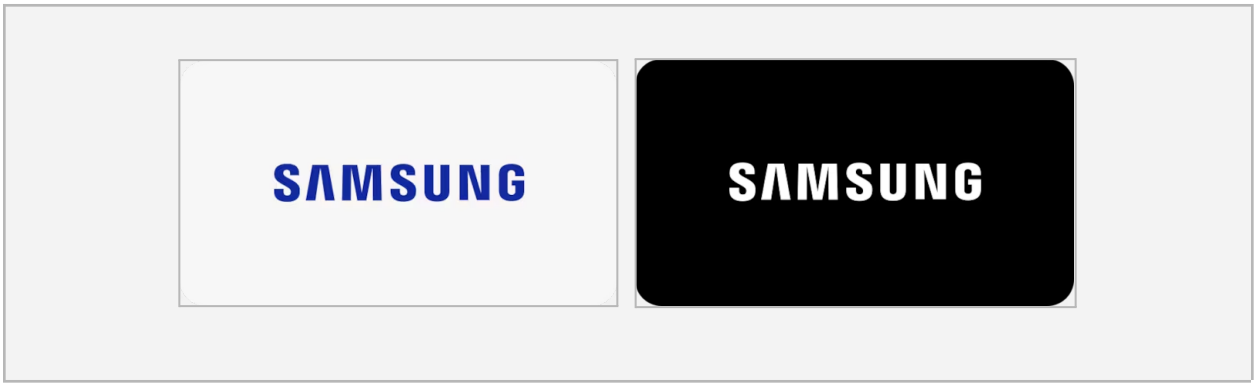


Figure 4. Samsung Logos
This figure shows two of Samsung's corporate logos, which express a contemporary look and feel through different designs. (Source: "Samsung Logo")

Figure 5. Google Logos
This figure shows two of Google's corporate logos, which the company changes over time to reflect holidays and historical events. (Source: "Brand Element Guidelines")

While companies like Samsung and Google like to use words in their visuals, there are some that do not. The companies listed below simply use images without words.

- Nike
- Apple
- Starbucks
- Target
- Microsoft

Not every company likes to have multiple visuals, either. Some prefer simple, eye-catching images to words. These are easier to remember and recognize from a distance.

Tools and Technologies for Creating Visuals

To create visuals, companies use a variety of tools and technologies, the most popular of which include Adobe Suite, Canva, Microsoft Excel, and Sketch. Below are these software programs and the features that make them unique.

- **Adobe Suite** is a software suite for several graphic design, video editing, and web development applications.

  Examples: Adobe Photoshop, Adobe Illustrator, Adobe InDesign, and Adobe Premiere Pro

- **Microsoft Excel** is used to create spreadsheets. It has calculation capabilities, graphing tools, PivotTables, and more.

- **Canva** is a graphic design platform used to create social media graphics and presentations. It also includes ready-to-use templates.
- **Sketch Design** is an all-in-one platform for digital design.

Each software has its own purpose and tools that justify its use. For example, technical communicators should not use Canva when they need an important graphic to show sales, nor should they use Adobe Premiere Pro when they need an illustration instead of a video.

Tips for Selecting the Right Tools

Software programs often include features that others lack. While some software is free, some require payment. Generally, the more one pays for the software, the more tools one gets.

> **Example:** Adobe has many internal applications to choose from. Some of the categories include Creativity and Design (such as Photoshop, 3D and AR, and Graphic Design), Marketing and Commerce (such as Insights and Audience and Content and Journey), PDF and E-signatures (such as Acrobat Pro, Acrobat Reader, and Acrobat Sign). These applications have free trials, but they do not last long.

Using Visual Communication in Technical Communication

Diagrams

Complex topics can be difficult to comprehend, especially for audiences that are not well versed in the topic chosen for presentation. Simple, understandable visual representations of complicated ideas can be created by using diagrams and flowcharts.

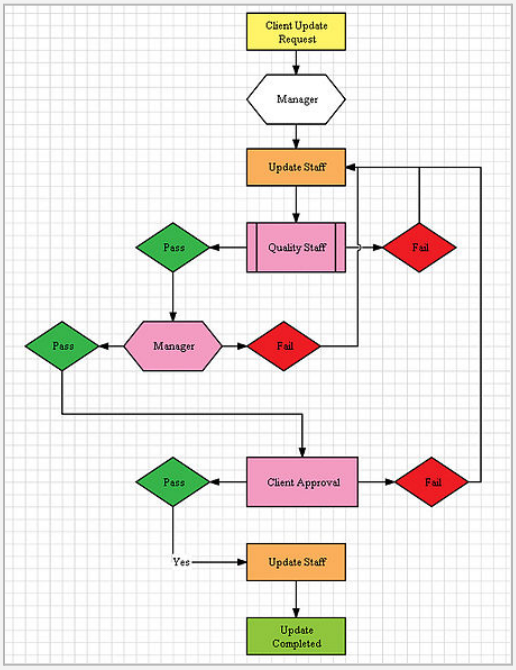


Figure 6. Client Update Flowchart
This flowchart depicts a client update request method. (Source: Fleming)

Images

In technical communication, screenshots and images are often used to provide visual aids for software or hardware documentation. They can help users understand what to do, what to see, or what to expect as they complete procedures.

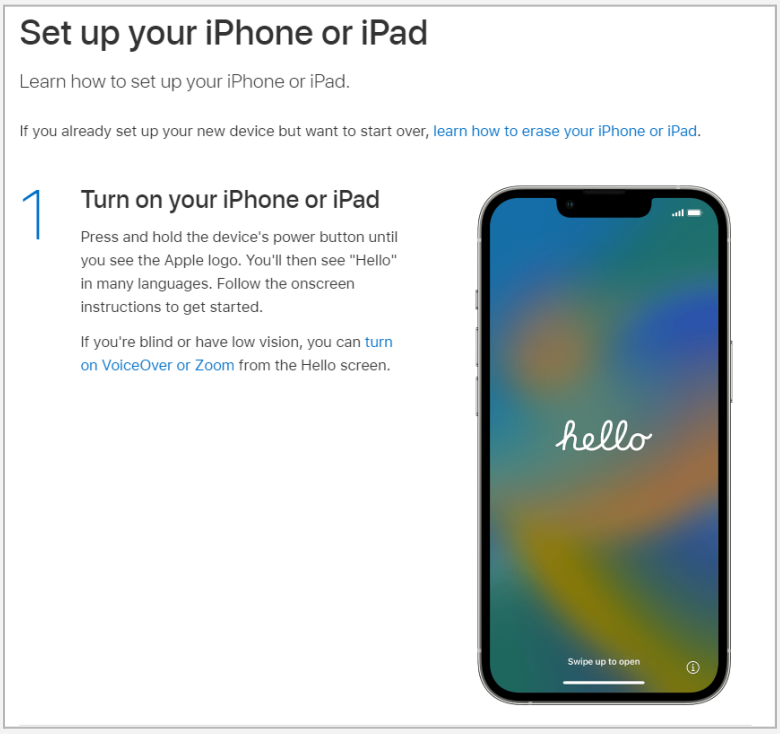


Figure 7. iPhone or iPad Setup
This figure shows the first step in setting up an Apple device with the visual aid of a freshly booted iPhone. (Source: “Set Up Your iPhone or iPad”)

Infographics

Infographics are an effective way to visually condense a large amount of material. They can be used to complement technical reports or user guides by presenting important information in a comprehensive manner.

Figure 8. Diversity and Inclusion Infographic
Using the visual communication guidelines outlined in this chapter, this infographic illustrates diversity and inclusion terminology. (Source: Nediger, *What Is an Infographic?*)

Videos

Videos and animations can be used to demonstrate procedures, provide step-by-step instructions, or show how products work. These visual aids can help to clarify technical information, especially for users who are more visually oriented.

Using Graphics in Technical Documents

Figure 9. Example Usage of a Video
This YouTube video explains and demonstrates how to use graphics in technical documentation. (Source: Clinton)

Visual Cues

Visual cues such as color and typography can also be used to draw attention to important information or organize content in an easy-to-follow way. For example, headings and subheadings can be bolded or colored to make them stand out. Technical communicators can also make use of color associations, readability, spacing, and hierarchy of topics in their materials.

Conclusion

In technical communication, visual communication is essential to provide information quickly and concisely, convey an idea through more than words, and persuade readers through a visual medium such as graphics, symbols, and other forms of imagery. Visuals are also key to making abstract concepts more digestible and tangible to the audience, while taking into account the nuances of their needs and preferences. This method of communication ensures that audiences have the greatest opportunity to understand concepts by presenting them through a visual medium.

9. Layout and Design

By Andy Garcia, Jonathan Prawiromaruto, and Joyce Rosa Robles

The design of a document has a significant impact on how well it is accepted by its target audience. While a poorly-designed layout can make even the most plain content perplexing and challenging to follow, a well-planned layout can make complex information easy to understand and digest. Technical communication frequently contains diagrams, instructions, and other details that must be conveyed rationally and clearly. In this context, a technical document's layout is a crucial element that can have a big impact on its usability, accessibility, and overall efficacy.

White Space, Margins, and Alignment

The empty or blank regions on a page that divide and emphasize text and graphics are referred to as white space or margins. The effective use of white space and alignment establishes a visual hierarchy, highlights key information, and increases readability by minimizing eye strain and cognitive burden.

Typography and Paragraph Blocking

The font, size, color, and style of the text used in the document are all examples of typography. Correct typography aids in the creation of a uniform and professional appearance, increases readability, and directs the reader's attention across the information.

Sizing, Color, and Visuals

These are images, charts, graphs, tables, and other visual elements that enhance the understanding of the content. Proper use of visuals can help to break up long blocks of text, clarify complex ideas, engage the reader's attention and heighten the design quality of the technical communication.

All three components are necessary in a technical paper since they add to the overall efficacy of the message. They collaborate to build a visually beautiful and easy-to-navigate document that provides information simply and effectively. A well-designed layout can improve the document's usability, accessibility, and overall effect.

Margins

In order to implement a good layout in a document, margins are a crucial component. In addition to helping structure and arrange the material on the page, margins specify the area between the content and the page's edge. The use of margins to provide white space in technical documentation enhances the document's aesthetic appeal and makes it simpler for readers to find and comprehend the information they need. Technical documentation can communicate complicated concepts and procedures effectively using margins to help with navigation and to emphasize crucial information.

Importance of Margin In Technical Document

The space between the border of the paper or document and the text is referred to as the margin in technical writing. Marginality is crucial in technical documents for several reasons.

Readability

Margins add white space around the text, making it simpler for readers to read and comprehend the information. This is especially crucial in technical writing, where complicated material can be overpowering if not formatted properly.

Professionalism

Utilizing adequate margins enhances the professional and polished appearance of a technical work. Margins aid in the creation of an uniform and structured design, making the document easier to navigate.

Printing

Margins are required when printing a technical document. If the margins are not properly set, some material may be chopped off or the layout of the page may be deformed.

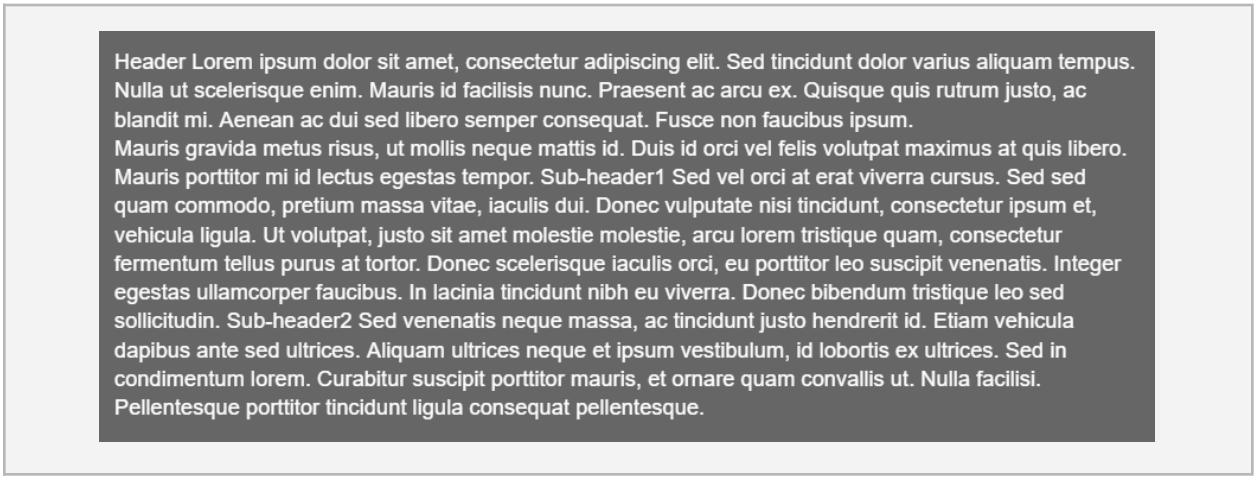


Figure 1. Weak Layout
This image provides an example of a weak layout. There is a lack of margins, emphasis, and spacing.

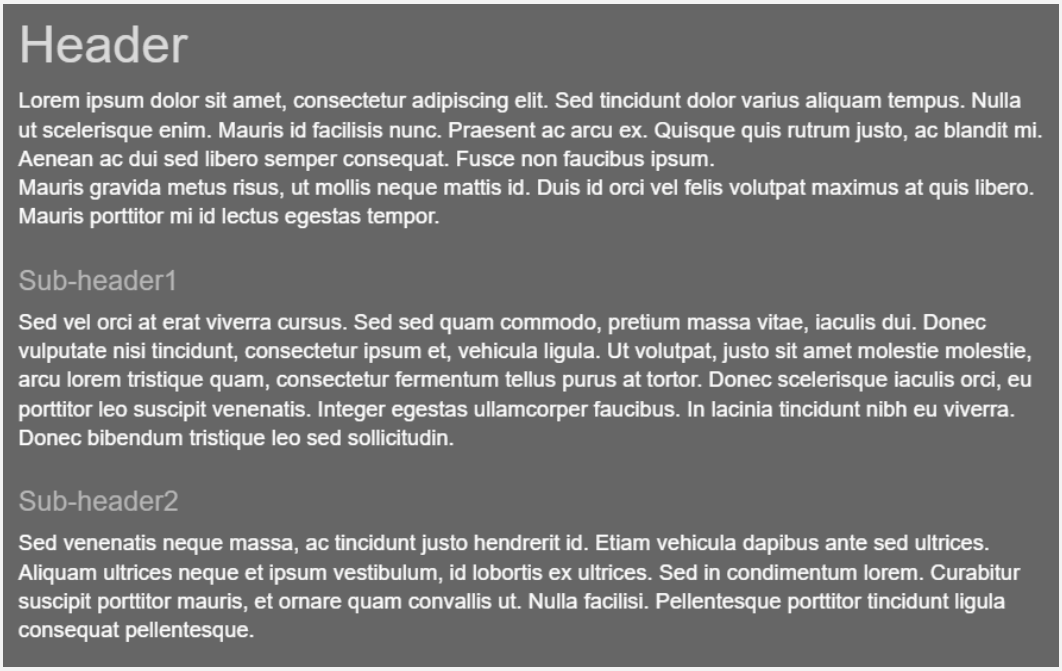


Figure 2. Strong Layout
This image provides an example of a strong layout. There is a good use of margins as well as division of information through the use of overall spacing and heading standards.

Margins in a Page Layout

Margins aid in visual separation between the page's content and other components like page numbers, headers, and footers. Moreover, margins offer a space between the information and the page's edge, preventing the content from looking crammed or cluttered. Margins can also be utilized to produce a balanced and appealing layout, especially when combined with other design components like color, font, and whitespace.

Using Margins to Highlight Key Information

Margins may assist with emphasizing crucial information by generating visual separation and emphasis around important text. By raising the margin on one or both sides of a text block, you may direct the reader's attention to that portion and make it stand out from the rest of the material.

How Margins Highlight Important Information

Raising the Margin on One or Both Sides of a Text Block

Increasing the margin on one or both sides of a text block can make it look more prominent and aesthetically separate from the surrounding material.

Choosing a Different Color

Changing the color of the margin might serve to emphasize and draw attention to the text block.

Adjusting Font Style

Adjusting the font or style of the text within the margin might assist to generate contrast and bring attention to the important information.

Best Practices for Margin Settings

Utilize Standard Margins

Unless there is a compelling reason to do differently, standard margins should be used for technical publications. Typically, they are one inch on all sides, however other document types may suggest slightly different margins.

Examine the Page Layout

Depending on the type of document that is being generated, the margins may need to be adjusted to suit different page layouts. For example, when designing a document that will be printed on both sides of the page, one might need to utilize greater margins on the side where the binding will be to keep the text readable.

Consider the Intended Use of the Document

Lastly, while determining margins, it’s vital to keep the intended use of the document in mind. If the document will be viewed on a screen, the margins may be slightly smaller than if they were to be printed and read in hard copy. Similarly, if the document will be disseminated online, the margins may need to be adjusted to ensure that it is suited for viewing on different devices.

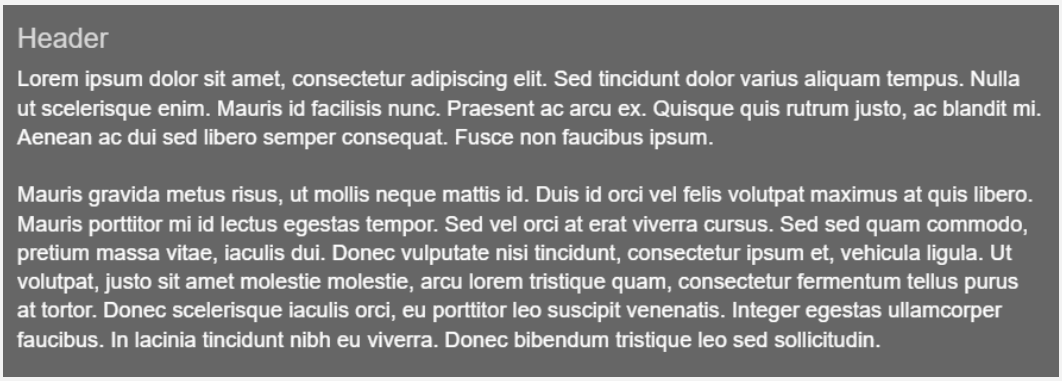


Figure 3. Standard use of margins and spacing
This example shows a good use of margins and line spacing. This formatting lets the overall layout shine through and gives a clear indication of where different parts of information are.

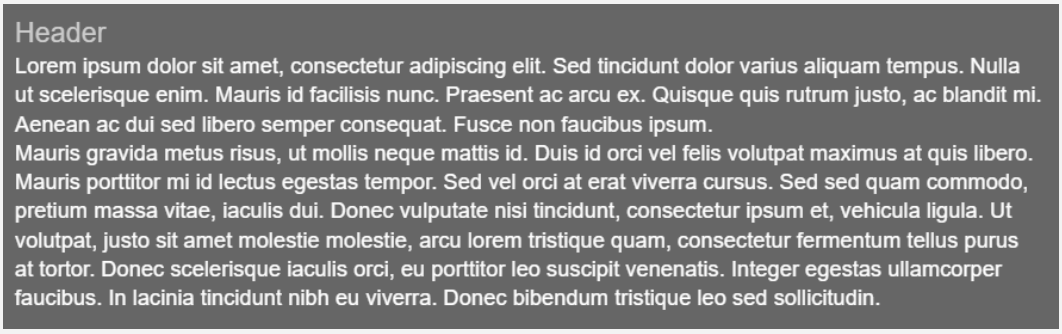


Figure 4. Lack of use of appropriate margins and spacing
This example shows the lack of use of margins and line spacing. There is no room for the content to breathe and it looks “squeezed”.

Margins Best Practices

Overall, there are several best practices to use for margins in technical communication.

In technical communication, do:

- use consistent sizes for margins
- indicate the presence of margins with enough white space, color variations, etc.
- consider the overall page layout

- consider the output method, such as whether it will be printed or displayed digitally on screens

In technical communication, do not:

- use inconsistent sizes for margins
- make the margins too small or too large
- let margins distract from the content within

Alignment

Alignment is an important part of technical documentation because it guarantees that the document is visually appealing, easy to read and understand, and effectively communicates information to the reader. Appropriate alignment is critical for maintaining consistency and clarity in technical documentation, which is especially vital for complicated information.

Alignment in technical documentation refers to the positioning of text, pictures, tables, and other items on a page, which can affect readability, visual flow, and overall effectiveness. Technical writers can develop documentation that is both visually beautiful and highly functional by paying close attention to alignment, making it easier for readers to locate and utilize the information contained within.

Types of Alignment

Left Alignment

Left alignment is a formatting option that is widely used in technical publications to align text along the left margin. This signifies that the text begins at the left margin and finishes at the right margin, resulting in a straight left edge and a jagged right edge.

Left alignment is the default alignment in most word processing software and is commonly used in technical publications such as reports, manuals, and instructions. It is regarded as a more conventional and formal formatting option than other alignment alternatives, such as centered or justified alignment.

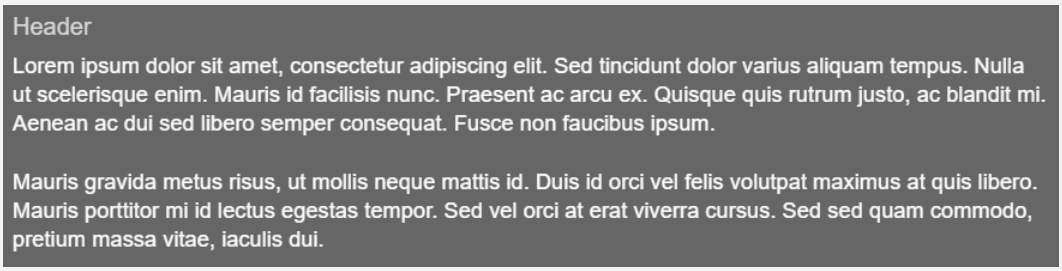


Figure 5. Left Alignment
This image proves an example of left alignment of text. Left alignment is the most commonly used type of alignment used in technical communication.

Center Alignment

Center alignment is a formatting option in which each line of text is centered between the document's left and right margins. Center-aligned text is used sparingly in technical publications such as for titles, headers, or other significant information that has to stand out from the rest of the text. Centering text inside a document can assist to establish a visual hierarchy and make it simpler for readers to find crucial information. However, it can be overused or abused which makes the document crowded or difficult to read. As a result, center-aligned text should be used sparingly and only when it serves a specific function for the content.

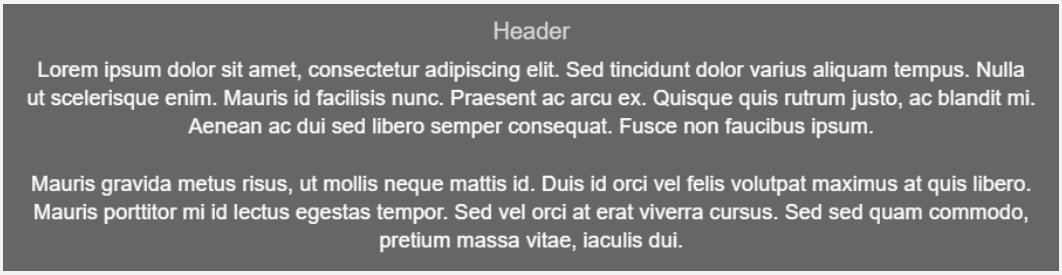


Figure 6. Center Alignment
This image proves an example of center alignment of text. Center alignment is not used often in technical communication, especially for body text. Center alignment should be limited to titles and headings. Centering large bodies of text makes it difficult to read.

Right Alignment

Right alignment is a formatting option in which text or other information is aligned along the right-hand margin of a page or document. This indicates that the information is aligned to the page's or column's right edge, but the left edge remains uneven. This is frequently used for

formatting purposes, such as when displaying tables or lists with material that must be nicely ordered into columns.

Right alignment is often utilized in page layout design for features such as headers, footers, and page numbers, which are usually put at the top or bottom of the page.

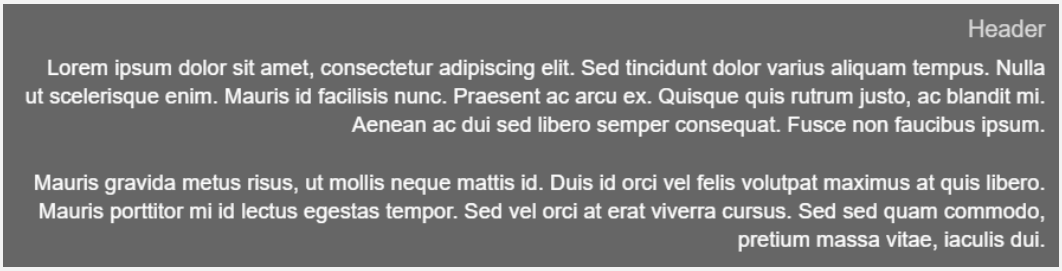


Figure 7. Right Alignment
This image provides an example of right alignment of text. Right alignment isn't as commonly used as left alignment, however it can be used in specific contexts.

Alignment Best Practices

Overall, there are several best practices to use for alignment in technical communication.

In technical communication, do:

- use the standard types of alignment
- use left alignment for large blocks of text
- use only one to two types of alignment throughout the entire document
- maintain consistency by using the same type of alignment based on content level

In technical communication, do not:

- switch between types of alignment without a clear pattern
- use all types of alignment throughout the entire document
- use center or right alignment for large blocks of text

Paragraph Blocking

A paragraph is usually around 250 words and consists of five or six sentences, although this can vary depending on the purpose of the paragraph or length of the piece that is being written. Paragraphs play a vital role in communicating the organization of ideas in a logical order. A basic paragraph is divided into three sections- the beginning, the middle, and the end.

The process of consistently establishing visual indications for the beginning and end of paragraphs in written documents is known as paragraph blocking, sometimes referred to as paragraph formatting or indentation.

Consistency

Rules for paragraph blocking ensure that publications and documents look the same. It's easier to read and follow a document when all the paragraphs are formatted uniformly.

Clarity

By making it simpler to distinguish between the beginning and finish of paragraphs, paragraph blocking can also increase a document's clarity. This is particularly crucial for larger publications because clean paragraph breaks make it simpler for readers to traverse the content.

Professionalism

A well-formatted paper that is consistent throughout can serve to project a sense of seriousness and care for the little things. In professional or academic environments where a polished image is demanded, this might be very significant.

Accessibility

A document's accessibility for readers with visual impairments or other disabilities can be enhanced by clear and consistent paragraph blocking. For instance, readers who are blind or visually challenged may rely on regular indentation or space to guide them through the text.

A document's paragraph blocking principles can aid in ensuring that the content is understandable, professional, and accessible to all readers.

Indentation Styles

The indentation styles of paragraphs will aid with paragraph blocking for the purposes of both visual design and content delivery. Below you can find a list and examples of the proper use of different styles of paragraph blocking.

Indented

Each new paragraph in this style is indented to provide the reader a visual break between them. It is a typical and traditional method of formatting paragraphs.

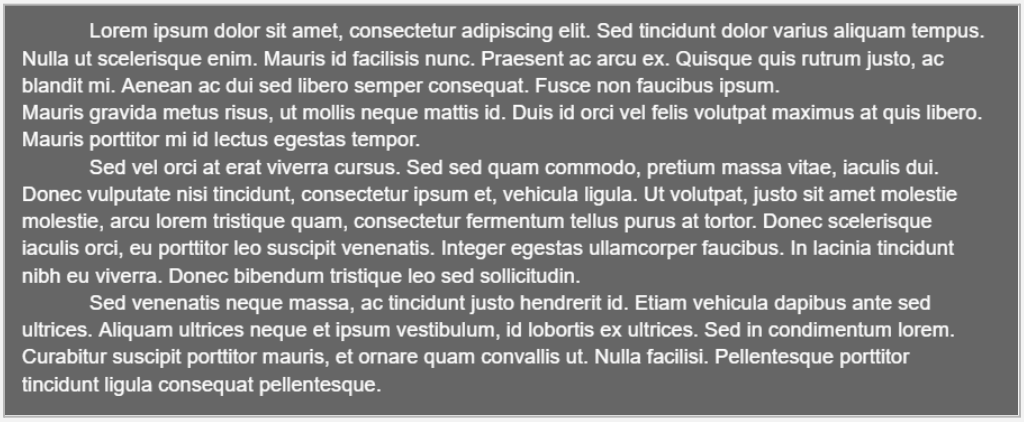


Figure 8. Indented Paragraph Formatting
This image is an example of indented paragraph formatting, which is used more often for technical communication.

Block

In this format, there is no indentation and each new paragraph is separated by a blank line. With this design, paragraphs are clearly distinguished visually.

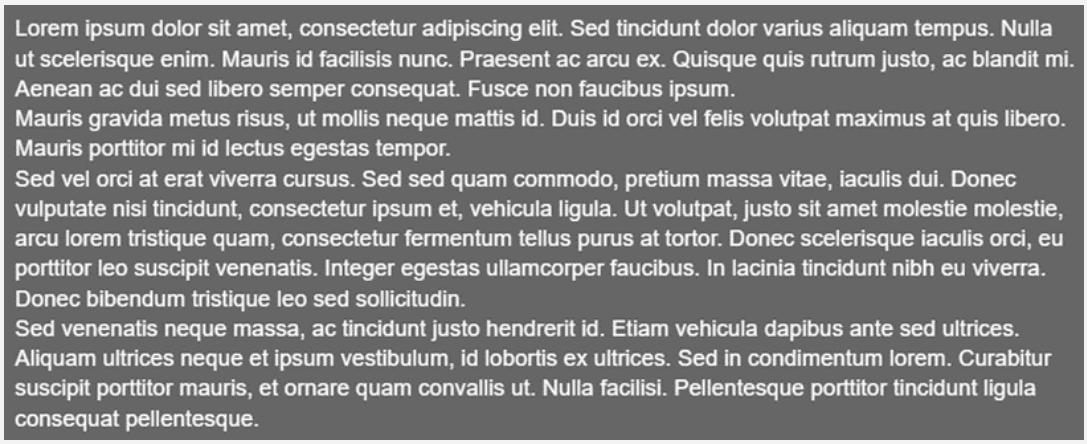


Figure 9. Block Paragraph Formatting
This image is an example of block paragraph formatting. This formatting makes it more difficult to read the content as there isn;t enough space to indicate each paragraph.

Hanging

The initial line of each paragraph is flush with the left margin when writing in the hanging style, but the following lines are indented. It is simple to notice where each new paragraph starts because of the visual "hanging" effect this provides.

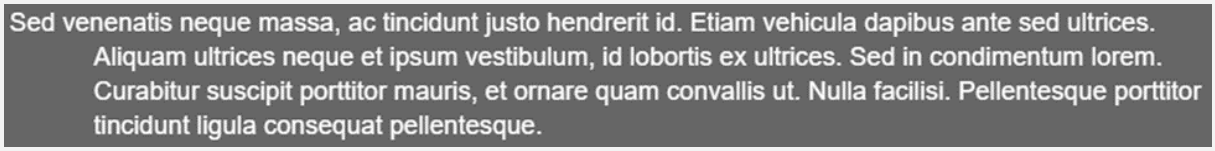


Figure 10. Hanging Paragraph Formatting
This image is an example of hanging paragraph formatting, which is used only for specialized cases.

Justified

Each paragraph's text is aligned to both the left and right margins when written in this manner. If the text doesn't fit cleanly into the allotted space, this may occasionally result in odd spacing rather than a clean, official appearance.

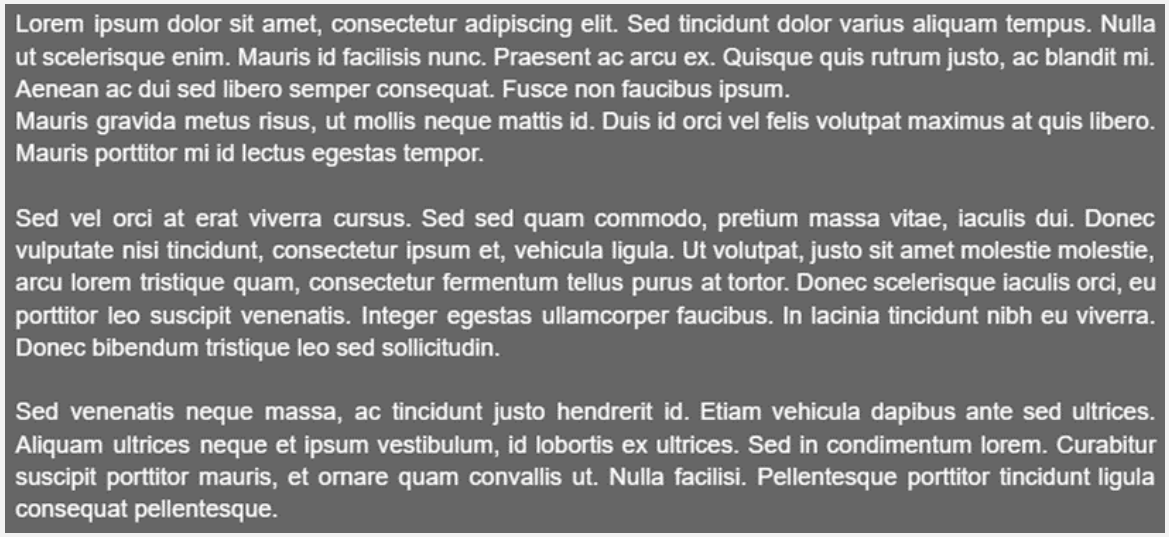


Figure 11. Justified Paragraph Formatting
This is an example of justified paragraph formatting, which is meant to make both sides of the content “match” and prevent any jagged edges.

Centered

Each paragraph is centered on the page in this style, with an equal amount of white space on either side. When utilized for lengthy passages of text, this can have a dramatic or attention-grabbing impact, but it can also make the text challenging to read.

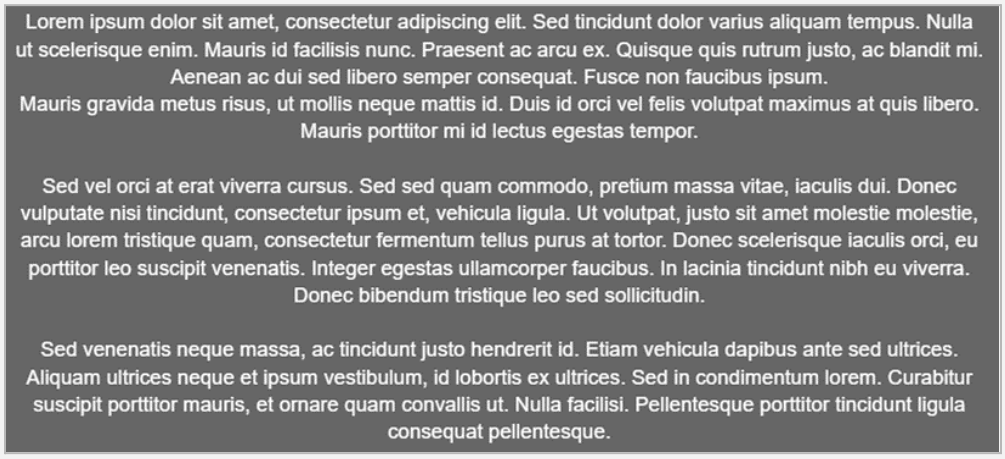


Figure 12. Centered Paragraph Formatting

Paragraph Blocking Best Practices

Overall, there are several best practices to use for paragraph blocking in technical communication.

In technical communication, do:

- use appropriate paragraph sizes with the maximum of 250 words
- use multiple paragraphs to expand on the content if necessary
- maintain consistency by using the same indentation styles

In technical communication, do not:

- limit the use of multiple paragraphs for the sake of keeping the document short
- use different types of indentation styles
- use paragraphs that are more than 250 words long

Emphasis

A key component of written technical communication is emphasis. Emphasis can be used to communicate meaning, tone, and intent. In order to guarantee consistency and clarity in all written content created. Emphasis uses rules that must be followed throughout the whole work.

First, the rules for emphasis make sure that written communication is clear by emphasizing words or phrases that are crucial for the reader to comprehend. This can make it simpler for readers to follow the flow of the text and can assist direct attention to the most crucial information.

Moreover, consistent use of emphasis helps to guarantee uniformity in all written content created by a brand or business by establishing precise rules for application. The visual identity of a brand can be established by the consistent application of emphasis, which also makes it simpler for readers to identify and interact with the brand.

Furthermore, it's critical to follow rules for emphasis when setting the tone in written communication. Bold text, for instance, might communicate a sense of necessity or significance, but italicized text can emphasize a point without being as obtrusive.

In order to guarantee accessibility in written information, a work's style guide must include criteria for emphasis. Brands and organizations can make sure that their written material is accessible to people with visual impairments or other disabilities by clearly defining criteria for the usage of emphasis.

In summary, recommendations for the use of emphasis are an important part of effective technical communication since they serve to guarantee that written communication is clear, consistent, intelligible, and accessible. A set standard can assist in producing effective and engaging written material that successfully conveys the intended message to the reader by outlining specific rules for the usage of visual signals, such as bolding or italicizing.

Emphasis Best Practices

Overall, there are several best practices to use for emphasis in technical communication.

In technical communication, do:

- use consistent use of emphasis
- limit the use of emphasis only to key words, terms, phrases, headings, etc.
- use emphasis clearly with bold, italics, and sizing

- use standard sizes for headings emphasis based on the word processing programming for initial creation

In technical communication, do not:

- use all forms of emphasis for one small bit of text
- change the emphasis formatting throughout the document
- use non-established forms of emphasis

Typography

Typography is the study and design of typefaces.Typography is an essential element to the development of a piece of technical communication for a number of reasons.

Typography is a crucial component of a work's visual identity and design quality. A consistent and identifiable design can be created by using the same typographic practices throughout the entire work.

Readability

The effectiveness of the message being given can be considerably impacted by the readability of the typeface used in technical communication. Technical writing frequently includes intricate and specialized information that may be challenging for readers to comprehend. This information can be made more available to readers by using a legible and clear font, which will make it simpler for them to understand and comprehend. In contrast, poor typography can cause confusion and frustration, which can result in misunderstandings and errors.

Additionally, technical communication frequently entails disseminating crucial information that if misunderstood or misread could have significant repercussions. For instance, in the medical industry, people may suffer grave health effects as a result of incorrect typography on prescription labels or dosage instructions. Unclear typography in assembly instructions or safety regulations can cause accidents or injuries in engineering. Hence, in order to ensure that the information is communicated clearly and efficiently and to reduce the risk of mistakes or harm, technical communication must utilize typography that is simple to read and understand.

Accessibility

The accessibility of typography in effective communication is essential as it ensures that everybody, no matter their skill level, can obtain and comprehend the information being conveyed. People with visual impairments may find it simpler to use assistive devices like screen readers when the font is clear and well-designed, enabling them to access the same

information as people without visual impairments. Additionally, typography that is especially created to be more readable and simpler to read may be advantageous for people with dyslexia or other reading issues.

Designing accessible typography for technical communication can help enterprises and organizations in addition to complying with legal obligations and ethical issues. Businesses can reach a bigger audience and enhance their reputation as an inclusive and socially responsible organization by making sure their materials are accessible to a wider range of people. Furthermore, making technical communication more user-friendly enhances comprehension and memory while lowering the possibility for misunderstandings, thus increasing the effectiveness of technical communication overall.

Consistency

Technical communication must adhere to a consistent typographic style in order to generate a clear and professional visual identity for the organization or company. Using the same typeface, font size, spacing, and formatting across all communication materials, such as user manuals, technical publications, and product packaging is known as consistent typography. Readers will find it simpler to recognize and relate to the writer's work thanks to this uniformity, which contributes to the creation of an unified and identifiable look.

In addition, the use of consistent fonts can make technical writing easier to read and use. Readers may quickly and readily recognize critical information, such as headings, subheadings, and key phrases by using the same font and layout throughout all communication pieces. Since readers do not have to spend time adjusting to various styles or layouts, consistency also helps to lower cognitive burden. In the end, this results in a more effective and efficient reading experience, enabling readers to comprehend and remember the information being delivered.

Professionalism

Technical documentation and communication materials frequently contain intricate and specialized information, which calls for meticulous correctness and attention to detail. Organizations can show their dedication to quality and attention to detail by adopting professional, clear, and consistent typography, which can improve their reputation as a legitimate and dependable source of information.

On the other side, bad typography might come across as unprofessional, which damages the trust of the company or brand. Typographical errors, irregular formatting, and imprecise typography in technical writing can be confusing and frustrating, which can result in misconceptions and errors. Contrarily, well-designed, understandable typography can improve the usability and readability of technical communication, raising the chance that the content will be understood and remembered. In the end, this improves communication and yields better results.

Typography Best Practices

Overall, there are several best practices for using typography in technical communication.

In technical communication, do:

- use fonts that are clean and easy to ready
- use appropriate size for body text, such as 10 pt to 12 pt
- use a limited amount of font types, from two to four at maximum
- maintain unity by using similar font families

In technical communication, do not:

- use overly ornate fonts, especially for body text
- use fonts that are too small to read or too large for the overall layout
- use any more than 4 font types in one document

Sizing

Technical communication comes in many different formats, document types, and mediums. Document types and technical communication mediums are often subject to sizing standards, which helps with distribution and consistency. In technical communication, the size of the medium will determine how the other layout elements and content will be created. This is why for every single document/file creation program (Word, Photoshop, etc.), the first step is to determine what size the piece will be. If this step is not done, then the next step cannot be reached.

Importance

The size of a technical document or piece of writing is important. It is the very first step in the actual writing process. Size impacts other elements of design and content, such as the use of text, graphics, margins, and spacing. Before the consideration of any other elements of the layout of the design of a document, there must be knowledge of the specific document type that is required. This provides a basic starting point to then make appropriate layout and design choices for the rest of the elements that are involved when creating effective technical communication.

Context

The context of the technical communication and medium it will be delivered in will determine the size that will be used. When creating the size formats for documents,multiple factors should be considered in order to choose the best size for the deliverable.

Consider the Display

The display of the final product being print or digital will have a large impact on the size that will be used. As such, it's important to consider the main display type. In addition, the rise of technology has made much of technical writing related to both display types. The increased presence of technology means that documents are now expected to perform optimally when viewed both in print form and digital form.

Consider the Proximity

The audience's intended proximity is arguably the most important factor. If the audience is intended to view the document from a distance, then a larger size is needed in order to effectively communicate the content. In contrast, if an audience is intended to view the document up close, then the sizing would need to be smaller in order to accommodate for eye strain and ease of use.

Consider the Length

The length of the document as whole will influence the sizing. For example, posters are usually one page and are thus larger. In contrast, a document detailing how to use Google Docs would be multiple pages long and may use a more standard letter size to avoid overwhelming the audience.

Consider the Orientation

The orientation of landscape and portrait have an innate impact on the size dimensions of a document. As such, the intended orientation has to be suited to the content and context itself. For technical communication, portrait orientation is more commonly used than landscape orientation. However, landscape orientation may be used for posters, specialized documents, schedule formatting, and so on.

Common Document Sizes

There are many different types of document sizes depending on the country, but for the purpose of this guide there will be a focus on the most common document sizes used in North America (Davis 2021). While the size of a document can be customized depending on the program that is used, it's important to try to follow a size that is already established and recognized. Using established sizes will make the creation and distribution of the work more efficient.

Letter

The standard size for a piece of letter paper is 8.5” × 11”. Letter size paper is the most commonly-used format for writing and documentation in North America, making it compatible with a plethora of programs, printing mediums, and distribution methods.

Legal

The standard size for a piece of legal paper is 8.5” x 14”. Legal size paper is primarily used for its name-sake, legal documents. However, this paper size can also be used for longer documents that may require more space in order to effectively display content.

Tabloid

The standard size for a piece of tabloid paper is 11” x 17” Tabloid size is not used as often as the other methods, however it is used for posters. When creating technical communication in the form of posters, the larger size warrants the ability to add more content. This includes adding more text, the use of more graphic elements, and changes in typography elements such as font size.

Business Card

The standard size for a business card is 3.5” x 2”. While business cards are generally only used for a specific type of context, it’s important to consider how their limited size creates a unique challenge. As this medium is significantly smaller than the standard letter paper size, that means the content and elements must be compressed enough to convey the same message with less room to work with.

Sizing Best Practices

Overall, there are several best practices for using sizing in technical communication.

In technical communication, do:

- analyze what media the final product will be displayed or distributed
- consider factors such as the distance and orientation that the audience will encounter the technical communication
- maintain consistency in sizing if the document is multiple pages or pieces
- use standard sizes to make development and distribution easier.

In technical communication, do not:

- use inappropriate sizing for the context
- use multiple different sizes for the same document
- use sizes that do not serve the content

Color

Color is a vital element to consider when creating technical communication. The use of the element of color serves as a means of communicating. This element is highly visual and can make or break the document's success. Color should be chosen carefully, as it is meant to strengthen the content rather than disrupt focus. The most important factors for effective color use in technical communication are contrast and consistency.

Contrast

Contrast is when there are two or more elements that have a clear and notable difference from each other.

High contrast makes the content more accessible to the audience. The most common use of color is dark text on a light background, specifically black text on a plain white background (Accessible U). This is due to the sharp contrast that it provides, which makes it easier to read for a broader audience and takes into account instances where color detection may be difficult. This includes colorblindness, vision abnormalities, and sensitivity to bright colors.

While the use of black text on a white background is common, it is not the only acceptable use of color in technical communcation. There are various ways to combine colors to communicate effectively. Specific color choices and combinations have various meanings and looks, which impact the overall design quality of the document.

The most important note is to implement high-contrast color choices to maintain legibility and accessibility. A good rule of thumb is that if there is any squinting needed to clearly distinguish the text from the background, then the colors do not have enough contrast and therefore should not be used.

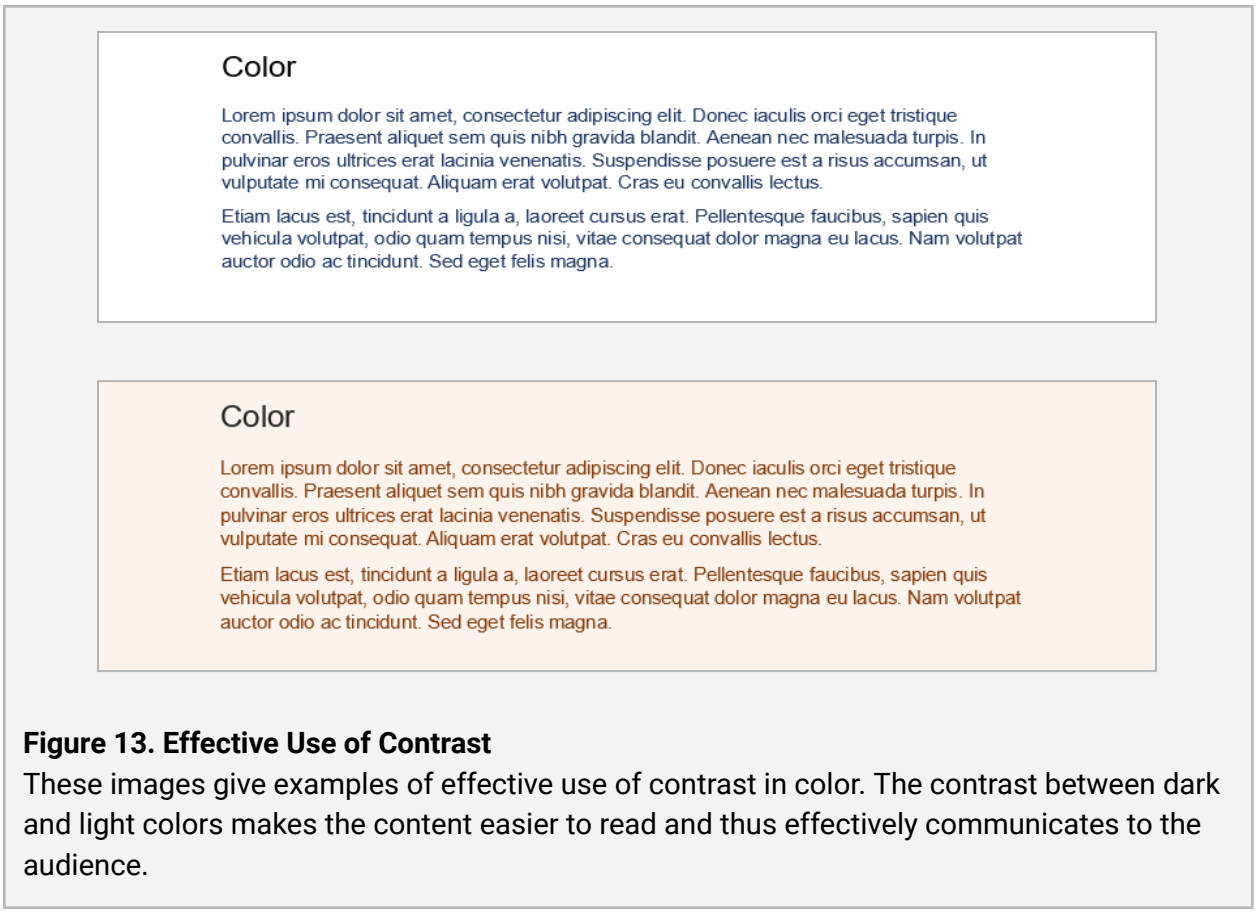
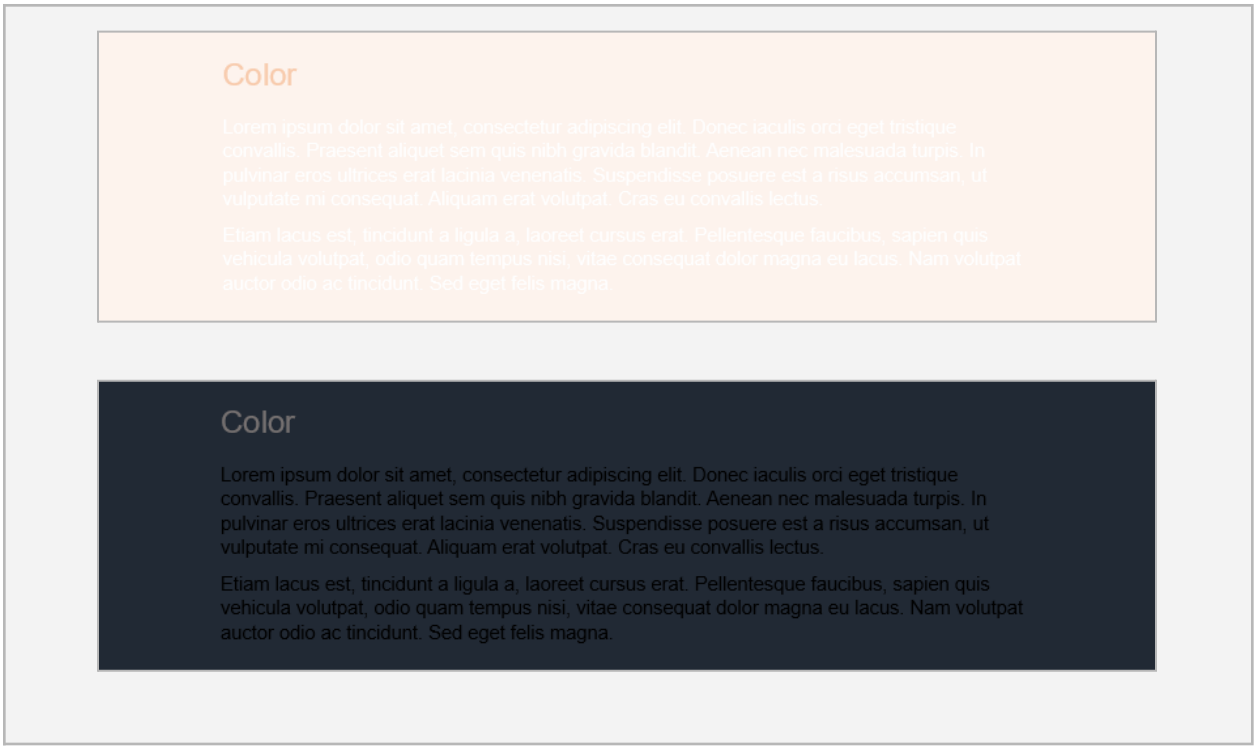


Figure 13. Effective Use of Contrast
These images give examples of effective use of contrast in color. The contrast between dark and light colors makes the content easier to read and thus effectively communicates to the audience.



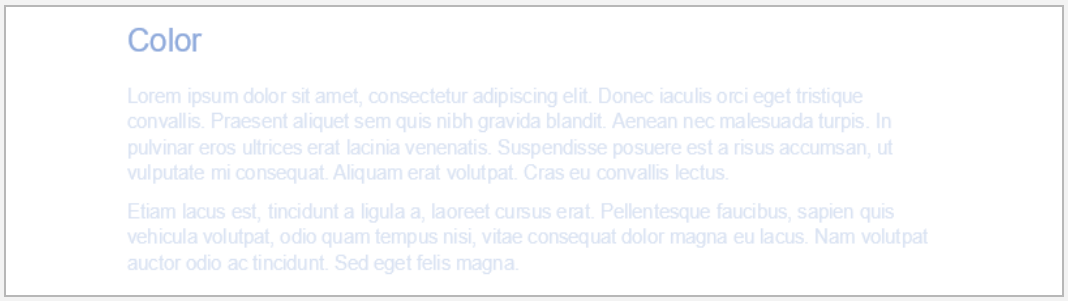


Figure 14. Ineffective Use of Contrast
These images give examples of ineffective use of contrast in color. The low contrast between the colors makes the content difficult to read. The lack of readability makes it hard for the readers to engage with the content seamlessly.

Consistency

Consistency is when there is a clear pattern in the formatting of the same type of element.

As with all elements of document design, consistency is vital to create a clean and professional design. Inconsistent use of colors will be visually overwhelming and unappealing to the audience. Readers look for patterns - if there is no clear pattern to the use of colors, then it will simply distract the readers and diminish the quality of the content delivery.

The most effective way to maintain consistency is to use a reasonable amount of colors in the same way throughout the document. This means using no more than 4 main colors and avoiding clashing colors. For example, if one color is used for the first heading level, then it should keep being used throughout the document for each first heading level. One orange first-level heading must not be followed by a green first-level heading. The important note is to always maintain consistency in color between text that is of the same level.

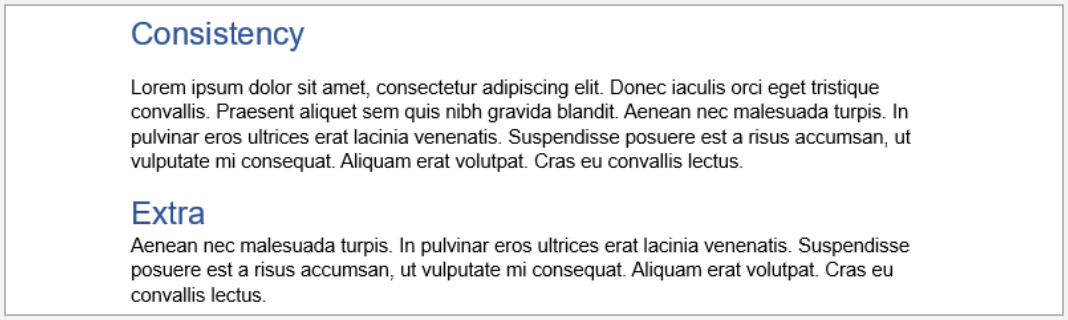


Figure 15. Effective Use of Consistency

This image provides an example of consistent use of color. The headings are each the same color while the body text is a different color. The stable use of color throughout technical communication will indicate information more clearly to readers.

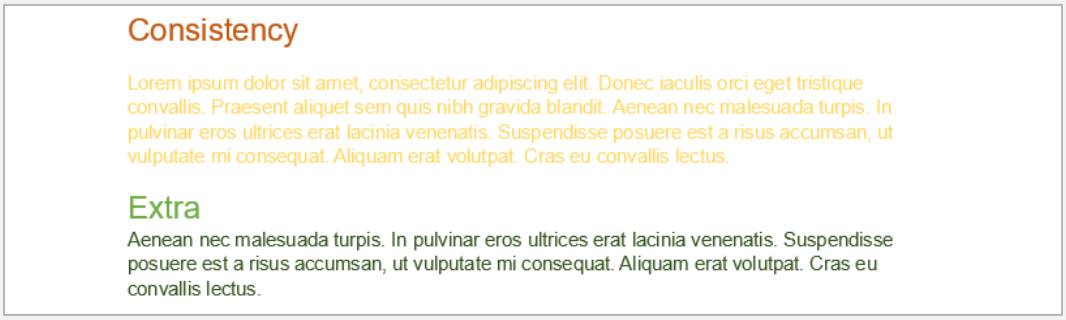


Figure 16. Ineffective Use of Consistency
This image provides an example of inconsistent use of color. The colors do not indicate any levels of information and thus make it more difficult to detect relationships within the content.

Color Modes

Color modes are the different settings that technical documents use for different displays and outputs. The two main color modes are RGB and CMYK.

The RGB color mode uses the base colors of red, green, and blue. This color mode is used for documentation and designs that are created for viewing on screens and digital formats.

The CMYK color mode uses the base colors of cyan, magenta, yellow and key (black). This color mode is used for documentation and designs that are created for physical printing.

It should be noted that the CMYK color mode is not supported by some of the most common programs used for technical communication design, such as Microsoft Word. Microsoft Word only utilizes the RGB color mode. This means that when creating a document in Microsoft Word that is meant to be printed, there should be awareness that the color of the printed version will not perfectly match the original digital creation. The CMYK color mode is most often supported by visual and image design programs such as Adobe Photoshop.

Color Selection

Each color combination communicates something unique. The meanings of color combinations vary depending on the country, as each place may have different interpretations of what a color

combination signifies. It is vital to consider who the audience is and their heritage, as it impacts which colors can be selected and their meaning.

Certain color combinations may also be associated with organizations or brands. An example is how bright red with white text may be associated with the brand Coca-Cola, or how blue and red may be associated with the NBA. As such, it's important to consider how the selection of color combinations may accidentally signify a connection with an entity that already exists.

It's important to consider that color isn't only used for text. Colors can be used for the background, body text, headings, decorative design elements, photographs, bars, charts, graphs, and so on.

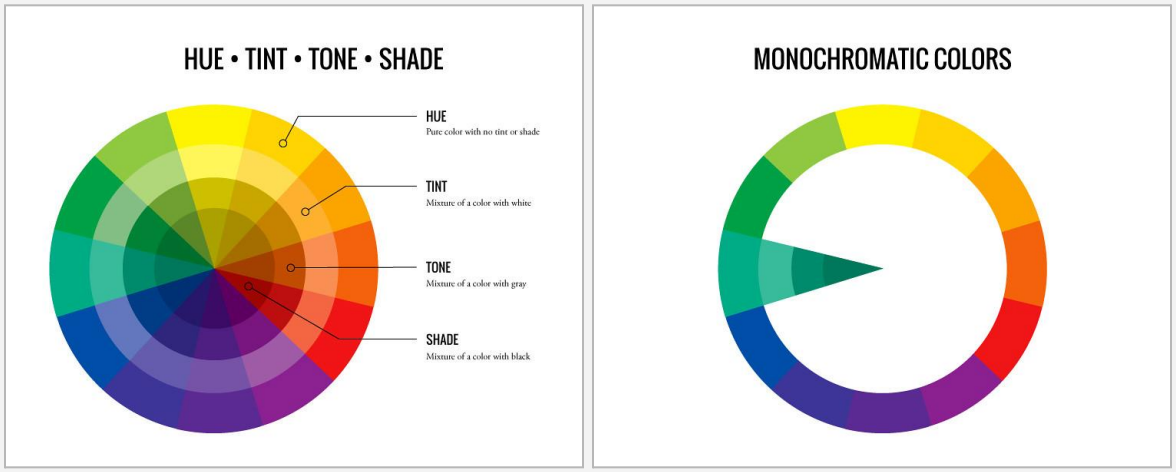


Figure 17. Color Wheel and Monochromatic Colors
This is a simple standard color wheel along with brief explanations of the concepts of hue, tint, tone, and shade. In technical communication, color combinations should be used according to groupings such as warm colors, cool colors, complementary colors, and monochromatic colors. (Sources: Lacie Lynnae, *Flickr*
Color Wheel - Hue, Tint, Tone, & Shade. Lacie Lynnae. Flickr. © CC BY-NC-ND 2.0.
https://creativecommons.org/licenses/by-nc-nd/2.0/.
https://www.flickr.com/photos/124222186@N02/14299692644/.
Color Wheel - Monochromatic Colors. Lacie Lynnae. Flickr. © CC BY-NC-ND 2.0.
https://creativecommons.org/licenses/by-nc-nd/2.0/.
https://www.flickr.com/photos/124222186@N02/14114276777/.)

Color Groupings

Color selection is often done based on "groups". To create a harmonious design and color palette, it is important to consider which colors are grouped.

Warm colors have a base of red, orange, yellow, and so forth. Warm colors are often associated with friendliness and comfort.

Cool colors have a base of blue, green, purple, and so forth. Cool colors are often associated with stability and calmness.

Complimentary colors are colors that are opposite of each other in the color wheel. When using complimentary colors, it's vital to consider whether the specific combination is appropriate. As a rule of thumb, the hue of at least one of the colors should be kept desaturated to prevent overwhelming the audience.This is especially true for larger parts of the design, such as background colors or body text.

Monochromatic colors are tint and shade variations of the same color. Monochromatic colors are used often in technical communication, as they are an easy way to keep the design unified while still keeping visual interest and appeal.

Color Best Practices

Overall, there are several best practices to use for color in technical communication.

In technical communication, do:

- use colors with high contrast, especially for body text and the background
- implement consistent use of colors, such as using the same color per each level of content
- use appropriate colors and consult the standard color groupings
- consider the color mode of the document, which will impact how it looks in the final output

In technical communication, do not:

- use colors with low contrast
- use colors in an inconsistent way
- use colors that visually clash or overwhelm the design

Lists

In technical communication, lists provide a unique way to divide content. Lists compartmentalize connected pieces of information with either bullets or numbers. They are a formatting tool that impacts the overall layout and flow of the content, as they provide points that readers will follow rather than the drag that is characterized by a long standard paragraph format. The use of lists in technical communication should have a clear purpose. Without a meaningful purpose, the list therefore becomes redundant and weakens the overall strength of writing.

Before the use of any lists, there are several questions that should be considered. Taking the time to analyze whether or not a list should be used will help strengthen both the reasoning and execution of the list.

Several questions that should be asked when creating lists are listed below.

- What is the purpose of this list?
- How many items would this list be?
- Does the order of the list items matter? If so, then how much?
- Would a list make these points easier to understand?
- Do the items in the list need more explanation to be truly understood?

List Types

There are several types of lists other than standard in-sentence lists. Each list type has its own purpose and an appropriate context that it should be used for. There are bulleted lists, numbered lists, labeled lists, and nested lists (Last 2019).

Bulleted lists are good to use when the specific order of the list items doesn't matter and doesn't impact the audience's understanding of the items. Bulleted lists are beneficial for dividing several parts that are related to a larger concept.

Example: There are three main states of matter:

- Solid
- Liquid
- Gas

Numbered lists are good to use when the specific order of list items does matter. A numbered list will direct the audience to follow the list in a particular order. In addition, it makes it easy to refer back to specific numbers in the list in further explanatory paragraphs.

Example: To set up a Microsoft Word document, follow the steps below.

1. Open Microsoft Word.
2. Click on the “New” tab.
3. Select “Blank document”.
4. Click on the “Layout” tab on the toolbar at the top of the screen.
5. Click on the “Margins” button.
6. Select the margin sizes that are desired.

Labeled lists are good to use when the list items need more explanation or definition to give readers a better understanding of the content.

Example: There are multiple factors that are related to color.

- Hue: Hue is the color shade in itself.
- Saturation: Saturation is how bright or vibrant a color is.
- Tone: Tone is how much a hue is mixed with gray or black.

Nested lists are good to use when sub-levels of list items are needed to effectively expand on the content. These types of lists aren’t used as often as the previous three. The use of these lists is highly contextual and they need to be used carefully so as to not overcomplicate information.

Example: The menu offers several selections:

- Coffee
  - Espresso
  - Macchiato
  - Cappuccino
  - Frappuccino
- Tea
  - Chai Tea
  - Green Tea
- Juice
  - Orange Juice
  - Watermelon Juice
  - Apple Juice

List Creation

After the selection of the list type, there are several standards for how to make an effective list. The list type largely varies on the content itself, but there is a general set of recommendations for effective technical communication when creating lists.

Cohesion of List Items

The most important factor in the creation of lists is the cohesion of the items. All of the list items must be clearly related. If the reader struggles to form a connection between the items, then the list has failed in its primary function. While the relationship between the items may be clear to the writer, the relationship may not be clear to readers. It's vital to avoid the assumption that readers will automatically understand the writer's own processing.

Number of List Items

The number of list items can make or break the list. As a general rule, the number of list items should range from a minimum of 3 to a maximum of 8 (Last 2019). If there are too many list items, then it becomes difficult to read through the list effectively. If there are too few list items, then the reader will question whether the existence of the list in itself is even necessary. If the reader finds that the list is redundant or overwhelming, then they will focus their attention elsewhere.

Length of List Items

The length of each list item should be appropriate to the context. As a general rule, the maximum length of each list item should range from 15 to 30 words. As the purpose of lists is to break up information into manageable pieces, the length of each list item should reflect that. While some list items may be just a single word depending on the context, effective list items are not long. Similar to the number of list items, the length of each item will impact the success of the overall list.

Structure of List Items

The structure of list items is essential for creating a pattern. The use of parallel structure in a list reinforces the relationship between the items, which allows the readers to detect a pattern and get more involved with the content.

Lists Best Practices

Overall, there are several best practices to use for lists in technical communication.

In technical communication, do:

- use lists only when they make sense to enhance the understanding of the content

- use consistent list practices
- keep lists from 3 to 8 items long
- consider the length, structure, and cohesion of the list items
- use parallel structure to enhance the pattern
- keep each list item length from 15 to 30 words long

In technical communication, do not:

- use different list types when speaking on the same type of information
- write long sentences or paragraphs for each of the items
- use less than 3 list items or more than 8 list items
- use lists at random or to make the content more “interesting”

Conclusion

In conclusion, the layout and design of a technical document goes hand in hand with the effective quality of its content. To ensure the best delivery of the content, the visual design elements must be considered. The design elements of a document do not exist in a vacuum. Instead, elements such as margins, blocking, alignment, typography, color, sizing, lists, and so on all combine to create the platform that the content is being delivered through. The layout and design of technical communication all serve a distinct purpose. The appropriate use of layout and design can either distract and diminish from the overall quality of the technical communicator’s writing, or heighten the writing to a different level altogether. As such, it is vital to incorporate the use of appropriate layout and design choices depending on the context and overall look that is being aimed for.

10. Brand Identity and Company-Specific Language

By Gabriel Ruckstuhl and Hailey Tapia

Brand identity and company-specific language are critical components of technical communication that help convey a company's message and values to its audience. To communicate these concepts effectively, technical communicators must understand the nuances of brand identity and use corporate terminology as appropriate. A consistent brand identity builds trust, and technical communicators must ensure that their writing and speaking styles are consistent with the voice and tone of the brand.

This chapter provides guidelines for technical communicators to develop, maintain, and use branding and company-specific language in their communication materials. These guidelines will help technical communicators create a robust brand identity that connects with audiences and differentiates their organization from competitors.

Understanding Brand Identity

Brand identity is the visual and perceptible elements that a company presents to consumers, potential investors, and other external stakeholders. These elements, which range from the brand name and logo to colors and verbiage, are used to differentiate a brand from other companies, communicate a brand's goals, and create a brand personality (Nandan). To keep this personality consistent and reputable, a brand can create a style guide, which is discussed later in this chapter.

The purpose of brand identity is to give a company a recognizable image so that the brand resonates with its target audience. A cohesive and unified image can help a company build consumer trust as well as a degree of loyalty that, if successfully executed, can help solidify a company's position in the marketplace.

A well-made brand identity is essential to cementing a brand in the minds of consumers. Successful brand identity marketing campaigns can develop an emotional connection between the consumer and the company, creating a level of consumer trust that may not otherwise exist.

A strong brand identity can also give a company a sense of reliability that attracts consumers and distinguishes it from similar companies.

Key Elements of Brand Identity

- The **name of a brand** is often its primary identifier, as it is the first thing seen. A good brand name is easy to remember and relates to the company's personality and mission.

  Example: Patagonia shares its name with a South American region filled with wilderness, thus conveying its use for exploration.

- The **logo** of a company is just as important as the name. It is a visual representation of the given brand, and thus, the logo should be unique and easily identifiable to the target audience. A good logo is also easily remembered.

Figure 1. Nike's Logo
The Nike "swoosh" is instantly recognizable to anyone who sees it, even if it is modified. This figure shows the logo both on the shoes and in the lower-right corner. (Source: "Air Max Trainers")

- The **color palette** of a brand needs to be distinguishable and consistent. Colors are often used to elicit emotions, making this an essential tool in the perception of a brand.

  Example: Most children's toys use simple yet bright, vibrant color palettes.

- **Typography** is the choice of font style used in branding materials such as marketing and what is used on any products. Typography must also be legible but still perceived as unique.

> **Example:** Coca-Cola uses a unique typeface that is instantly recognizable, even when used to write words that have nothing to do with the company.

- **Vocabulary** consists of specific words and phrases. This can be a way of speaking such as simply being straightforward. However, recognizable vocabulary is optimal for creating recognition and personality.

> **Example:** McDonald's creates new words for items, such as naming their whipped treats McFlurries instead of simply mixed ice cream.

- **Graphics and images** consist of items like artistic pieces, billboards, and advertisement murals. Continuity is essential to this element.

> **Example:** The “Got Milk?” ad campaigns do not require any words or logos for association.

- The **tone and voice** of a brand is the way that a brand “talks” to its audience.

> **Example:** Old Spice commercials are known for their randomness, creating a recognizable image for the brand.

- The **mission statement** of a brand should effectively communicate its beliefs and give purpose to its products or services. This can, in turn, influence the audience into relating to and supporting the brand (Janonis).

Ethos in Brand Communications

Ethos in communications is a crucial part of building a strong brand image and good reputation with consumers. Ethos is the credibility of the communicator—in this case, the brand. A good ethos in brand communication can give a consumer a reason to identify with the company. For example, if a consumer believes a brand has values that align with their own, they will trust the brand and likely be proud to represent it (Urde).

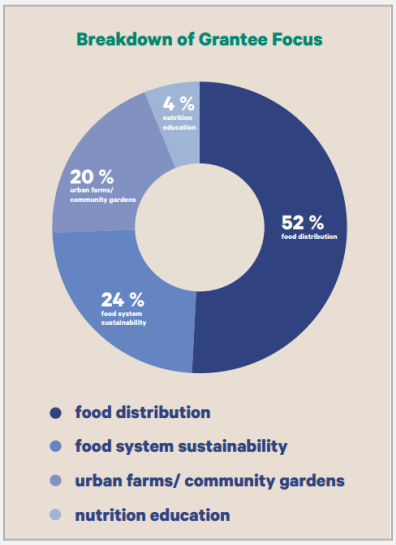


Figure 2. Fairlife Mission Pie Chart
This figure shows a pie chart from Fairlife that illustrates the company's consumer focus on sustainability and nutrition education. (Source: "2022 Community & Animal Care Report")

If a brand creates a good ethos by communicating to its target audience, it can receive financial support through otherwise unheard-of means, such as reposting by fans of the brand on social media. All of the elements of brand identity discussed previously are used to communicate a brand's ethos to consumers.

Role of Technical Communication in Brand Identity

Technical communication plays a critical role in creating and maintaining brand identity; it ensures consistency of message across all communications to a brand's target audience. By creating messages in this manner, a brand can build a strong and recognizable identity to which their audience relates. Consistency in messaging helps consumers remember the brand and its ideas, which should be consistent in turn.

Technical communication is responsible for creating a voice and tone that is unique to a brand. The same message written in a different tone can have a huge impact on how a brand is perceived, making tone a powerful tool when used correctly. It is important that this tone and voice be consistent with a brand's image and mission.

Technical communication helps build a sense of trust and credibility, promotes clarity, and reduces misunderstandings and perceived inconsistencies among stakeholders. Inconsistencies in communication can prevent a customer from remembering a brand correctly, which can be detrimental to the company. Consumers and stakeholders need to know exactly

what a company is selling in order to be willing to invest in it. Therefore, properly allocating resources to ensure effective technical communication creates a consistent, reliable, and trustworthy brand image (Nandan).

Using Company-Specific Language to Technically Communicate a Brand

Company-specific language is the unique words and phrases that a company uses in its communications. This language may be used internally with employees or externally with consumers and stakeholders. Its purpose is to create a unique corporate image, both internally and externally, which in turn can create a sense of community that can have benefits such as improved communication, trust, and loyalty. When viewed from the outside, company-specific language can make a company unique among its peers.

Company-specific language can improve the efficiency of employee communication as well. A common vocabulary for employees can ensure that there is no miscommunication when referring to specific items that may have different meanings (Nandan).

How Company-Specific Language Reinforces Brand Identity

Company-specific language can enhance the recognizability and memorability of a brand. This language should be specific to the brand and identifiable when compared to other similar brands. When done correctly, a consumer will be able to recognize a brand based solely on the company-specific language.

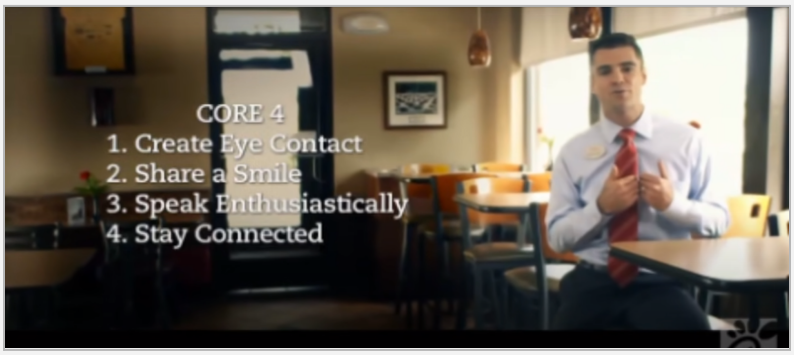


Figure 3. Chick-fil-A Training Video
This figure is a scene from a Chick-fil-A training video in which employees are told to speak enthusiastically to customers, an example of the company instructing employees to use a certain type of language that aligns with the brand's identity. (Source: The Hospitality Team Sugar House)

Guidelines for Using Company-Specific Language to Technically Communicate a Brand

Technical communicators should avoid technical terms that are not understood by general audiences. Although using company-specific jargon can show expertise, it can also confuse or exclude anyone unfamiliar with the terms. This is especially important to keep in mind with consumers; if the goal is to appeal to a large audience, technical communicators must use terms that are easily understood by the broadest possible group of people.

When using company-specific language, it is also important to consider the impact of the language on consumers. The language should convey the tone of the company, whether formal or casual. If a technical communicator wants to convey a casual brand identity, they may want to use contractions and a conversational tone. However, if a technical communicator wants to convey a professional brand identity, they must use formal language. Note that formal language is different from complex language that confuses stakeholders.

The intended audience is often the deciding factor in determining the type of language to use. Technical communicators need to consider the audience's prior knowledge of the brand or field, and whether they are communicating with an employee or a consumer. When communicating with unfamiliar consumers, simple and easy-to-understand terms are ideal. However, if the technical communicator's audience is knowledgeable in a specific field, they may use terminology from that field.

Style Guides

A primary responsibility of technical communicators is to ensure consistency in how they communicate with their audiences, but how exactly does that happen? Enter style guides.

Style guides are comprehensive documents that outline how to effectively communicate a brand's identity. They provide standards and guidelines for writers, editors, designers, and anyone else involved in a brand's communications to ensure that all content, regardless of who creates it, is consistent with the brand identity.

Types of Style Guides

Style guides can generally fall into three categories: brand guides, editorial guides, and language guides.

- **Brand guides**, also known as brand guidelines, focus on the visual and tonal aspects of brand identity. They provide guidelines for a brand's tone, voice, typography, logos, color scheme, and other imagery that communicate its personality and values ("What Is a Brand Style Guide?").

- **Editorial guides** focus on the overall structure of written content. They provide guidance on formatting, organization, style, and content development to ensure that a brand's print and online materials are consistent and easy to understand.
- **Language guides** focus on the contexts in which corporate language is used. They provide country-specific guidance on issues such as which language should be used for certain communications, or whether currencies should be abbreviated or spelled out in full (“How Do You Manage”). Language guides can also be incorporated into corporate dictionaries, which are discussed in the next section.

Common Components of Style Guides

Regardless of the type of style guide, there are several components that are common to most, which are listed below.

- **Tone and Voice:** This component specifies the tone and voice that should be used in communications.

  Examples: Use the active voice in user manuals to create a sense of immediacy. Use a conversational tone in social media posts.

- **Grammar and Punctuation:** This component provides guidance on proper grammar and punctuation, including how to use tenses, prepositions, conjunctions, and articles.

  Example: Use a comma before the conjunction in a compound sentence.

- **Formatting:** This component specifies the layout and formatting requirements for documents.

  Example: Use Arial font size 11 for all body text in documents.

- **Terminology and Word Usage:** This component provides guidance on the use of technical terms and company-specific language. It may also include preferred spelling, capitalization, and abbreviations.

  Example: Always capitalize "Internet" when referring to the global system of interconnected computer networks.

- **Visuals and Design:** This component sets guidelines for the use of visuals, such as images and tables, and design elements, such as colors and fonts. It may also outline any brand-specific design elements.

  > **Example:** Use a color scheme of black and gold for all marketing materials.

Importance of Style Guides in Technical Communication

Style guides are essential tools for technical communicators, providing guidelines for consistency, clarity, and accuracy. These guides have many benefits for technical communication, including the following:

Establishing Brand Identity

To establish a consistent brand identity, build customer trust, and maintain a strong reputation, technical communicators must present content in a way that is easily recognizable to the target audience. A style guide can help accomplish this by providing guidelines for maintaining consistency in a company's language and branding.

> **Example:** A company is known for its environmentally friendly products. The company's style guide states that text should be colored green when it discusses sustainability-related topics.

Ensuring Legal and Ethical Compliance

Technical content often contains critical information that, if not communicated accurately, can compromise user safety. A style guide can facilitate this process by providing guidance on the communication of sensitive topics, such as data protection, in compliance with relevant regulations, laws, or industry best practices.

> **Example:** A company offers financial services. The company's style guide provides guidelines for discussing financial topics in a clear and accurate manner as well as ensuring compliance with the Fair Credit Reporting Act.

Streamlining the Technical Communication Process

Without a style guide, the technical communication process can become cumbersome. However, with a style guide, technical communicators can avoid reinventing the wheel each time they develop new content; all the guidelines for writing, editing, and formatting are consolidated in one place, making it easy to quickly access the information they need. This is especially important when working on large-scale projects with multiple contributors.

Promoting Inclusivity

In today's diverse world, it is important to use language that is inclusive of all people, regardless of their race, gender, religion, or background. A style guide can help technical communicators avoid language that may be insensitive or offensive, such as gendered language or terms that may have negative connotations.

> **Example:** A company's style guide offers "denylist" and "allowlist" as alternatives to "blacklist" and "whitelist."

Examples of Style Guides in Technical Communication

Google's Developer Documentation Style Guide

Google made its style guide publicly available in 2017. Although it was created for internal technical writers creating developer documentation, the company released it to better support external contributors to its open source projects (Hartman). This editorial-based guide covers a wide range of topics, including voice, tone, word choice, and other style considerations in the following areas:

- General principles
- Language and grammar rules
- Punctuation
- Formatting and organization
- Linking
- Computer interfaces
- HTML and CSS
- Names and naming

Google's style guide emphasizes the importance of a consistent voice, tone, and proper text formatting for accessible documentation. To support this, it includes third-party references for both non-technical and technical style, ensuring that technical writers have access to a wealth of resources for their writing. The guide also acknowledges that it contains guidelines, not rules, from which writers should deviate as necessary to improve their content. Overall, Google's style guide provides technical communicators with a thorough yet flexible framework for writing documentation.

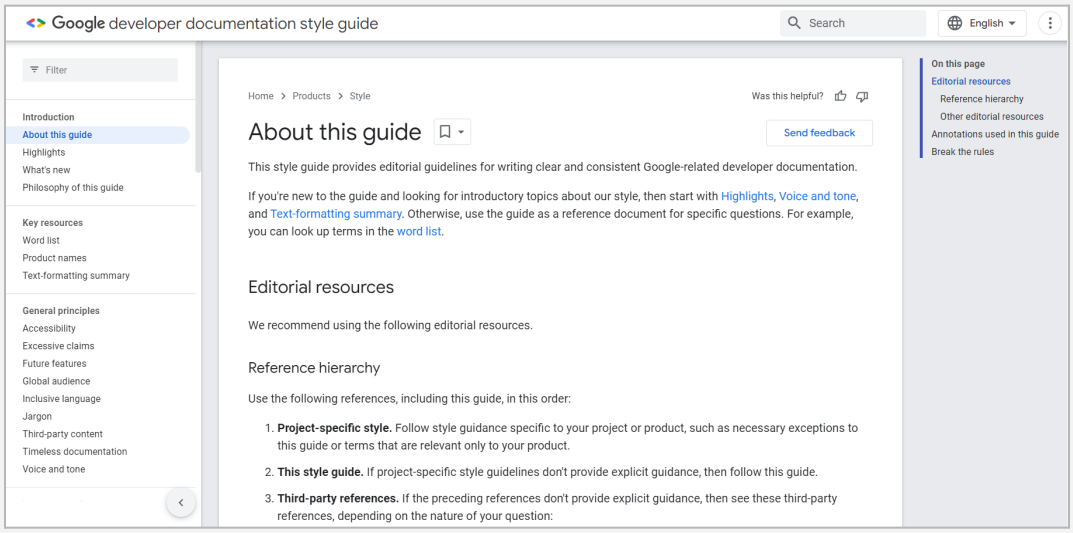
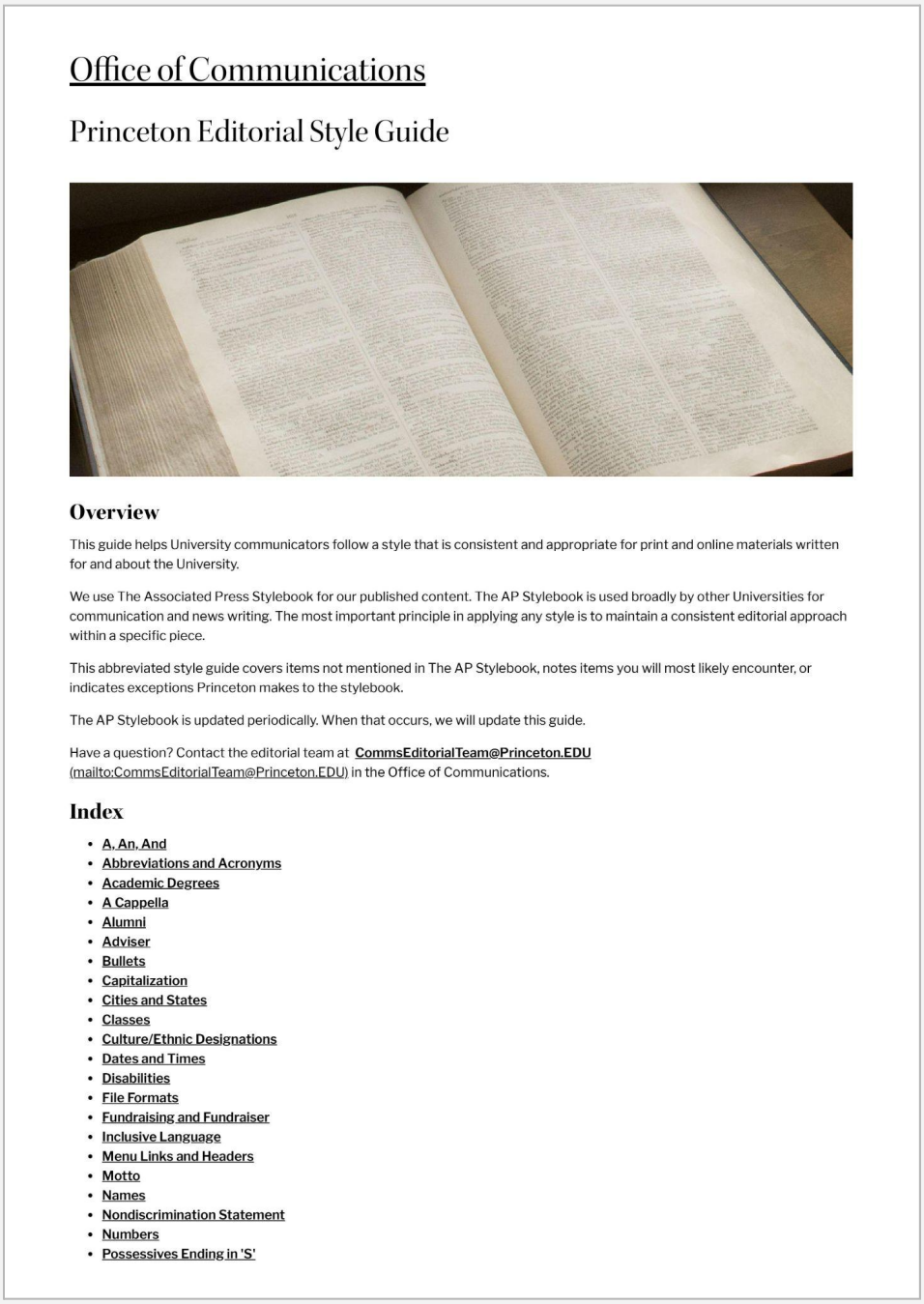


Figure 4. Google's Style Guide
This image shows the "About" section of Google's style guide. (Source: "About This Guide")

Princeton Editorial Guide

Princeton's editorial guide outlines writing style and communication guidelines for all written content produced by the university. The guide is based on the Associated Press (AP) Stylebook, but it also addresses topics not included in AP style, issues communicators are likely to encounter, and exceptions Princeton makes to AP style. It covers a wide range of topics, from capitalization and punctuation to inclusive language and web terminology.

Princeton's editorial guide is detailed yet flexible enough to accommodate different contexts and use cases. The guide is easy to navigate and uses clear language, making it accessible to technical communicators of varying skill levels. It includes a comprehensive index to help technical communicators quickly find the information they need and examples to help them understand the content in action. The guide's focus on consistency, appropriateness, and professionalism ensures that all university communicators deliver their messages in the same way, regardless of the medium or audience.



Office of Communications

Princeton Editorial Style Guide

Overview

This guide helps University communicators follow a style that is consistent and appropriate for print and online materials written for and about the University.

We use The Associated Press Stylebook for our published content. The AP Stylebook is used broadly by other Universities for communication and news writing. The most important principle in applying any style is to maintain a consistent editorial approach within a specific piece.

This abbreviated style guide covers items not mentioned in The AP Stylebook, notes items you will most likely encounter, or indicates exceptions Princeton makes to the stylebook.

The AP Stylebook is updated periodically. When that occurs, we will update this guide.

Have a question? Contact the editorial team at CommsEditorialTeam@Princeton.EDU (mailto:CommsEditorialTeam@Princeton.EDU) in the Office of Communications.

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- Possessives Ending in 'S'

Figure 5. Princeton's Editorial Guide
This image shows the overview and index of Pricenton's editorial guidelines. (Source: "Princeton Editorial Style Guide")

Skype's Brand Guide

Skype's brand guide focuses on maintaining identity and consistency when using the company's brand assets. In particular, it provides guidelines for the use of Skype's trademarks, including the Skype logo, the Skype icon, and the Skype product name. It also covers the following topics:

- Usage requirements
- Logo and icon usage
- Prohibited uses of brand assets
- Permitted uses of brand assets
- FAQs

Skype's brand guide demonstrates the importance of consistency in branding, which is critical to building trust and credibility with customers. By providing a clear set of guidelines for maintaining consistency in all aspects of communication, including messaging and visual design, Skype's brand guide provides technical communicators with a useful template for creating and implementing their own style guide. This not only helps them achieve their communication goals, but it also ensures that their messaging is consistent and in line with their brand image.

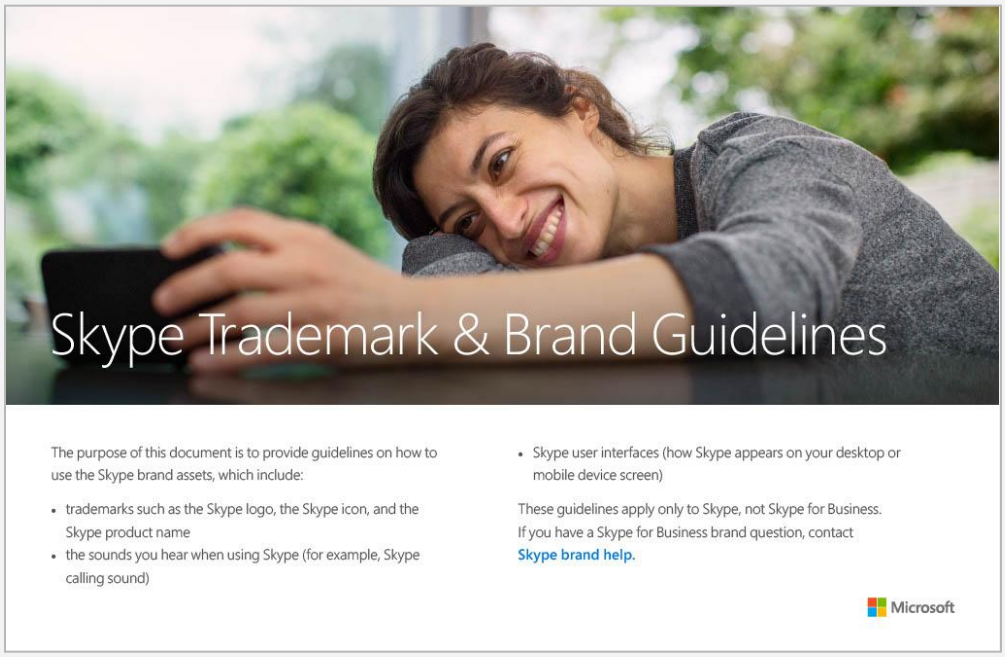

Figure 6. Skype's Brand Guide
This image shows the first page of Skype's brand guidelines. (Source: "Brand Guidelines")

Corporate Dictionaries

Corporate dictionaries are specialized reference materials that document a company's preferred language. Their purpose is to provide a common vocabulary for communication throughout an organization, ensuring that terms are defined, used consistently, and understood by all internal members.

Unlike style guides, which can encompass various elements of communication and branding, corporate dictionaries focus on establishing consistent usage for terms, phrases, and concepts unique to a particular company or industry.

Common Components of Corporate Dictionaries

Corporate dictionaries are typically organized alphabetically and contain a variety of terms and definitions, including:

- **Terminology:** This component defines company-specific items, including diction, processes, project names, internal softwares and systems, and abbreviations.

  > **Example:** The term “pipeline” can have a different meaning from its literal meaning of a long pipe. In a company’s sales process, “pipeline” can refer to the potential deals on which salespeople are currently working.

- **Usage:** This component adds clarity to certain terms by providing additional information about the context in which those terms are used.

  > **Example:** The term “conversion” can have different meanings depending on the industry in which it is used. For B2B companies, it can refer to website visitors who sign up for a newsletter, and for e-commerce companies, it can refer to the percentage of leads that become paying customers (“Conversion Marketing”).

- **Approved Alternative Terms:** This component provides terms that are acceptable alternatives to terms or phrases commonly used within an organization.

  > **Example:** The term “customer” may be used interchangeably with “client” or “guest.”

- **Pronunciation:** This component provides guidance on the correct pronunciation of terms used within an organization. It is used only when necessary.

  > **Example:** “MySQL” is pronounced “my-ess-queue-ell,” not “my-see-kwel.”

Importance of Corporate Dictionaries in Technical Communication

Corporate dictionaries are critical tools that help organizations maintain language consistency, but their value goes beyond that. Below are the key reasons that corporate dictionaries are important for technical communicators.

Eliminating Ambiguity and Confusion

Corporate dictionaries provide a standardized list of terms for use within an organization. By sharing vocabulary, technical communicators can eliminate ambiguity and confusion when communicating with one another or other stakeholders. This consistency in language usage ensures that everyone involved in a project is on the same page.

In addition to defining terms, corporate dictionaries can provide guidance on usage and context, further helping clarify meaning. Technical communicators should regularly consult their company's corporate dictionary to ensure that their communications are consistent with brand standards.

Example: A software company has two similar-sounding products named "Proxima" and “ProximaX.” Without a corporate dictionary, technical communicators may interchangeably use these names, but with a corporate dictionary, they can easily define and differentiate between the correct names of these products.

Improving Efficiency

When technical communicators have questions about language, they may need to consult subject matter experts or conduct research to find the answers. However, by using a corporate dictionary, technical communicators can instantly access the correct terminology. This helps streamline work processes and improve the overall efficiency of technical communication.

Example: Engineers often attach notes to technical drawings that describe the details of a part or assembly. Without a corporate dictionary, technical communicators may spend considerable time clarifying the terminology used in these notes. But with a corporate dictionary, technical communicators can avoid wasting the time and effort required in this scenario.

Contributing to Style Guides

Corporate dictionaries provide a foundation of language guidelines that can be expanded into the broader tone, voice, and formatting guidelines of a style guide. A corporate dictionary can also be used to identify areas where a company's communications are inconsistent, which can help develop more robust communication guidelines in a style guide.

Reinforcing Brand Identity

When technical communicators use the same language to describe products and services, they not only avoid inaccuracies that reflect poorly on a brand's professionalism, but they also create a consistent, strong brand experience for audiences. A strong brand identity, in turn, can improve customer loyalty and corporate reputation.

Example: A company uses “customer service representative” in its job descriptions while using “customer support agent” in its software documentation. Both terms refer to the same role. By creating a corporate dictionary that defines the correct term for the role, the company can maintain consistency in its language and strengthen its brand identity.

Improving Collaboration

Corporate dictionaries can improve collaboration by providing a shared language and understanding among technical communicators, regardless of department, technical background, or location. Corporate dictionaries can also help break down language barriers in multinational companies by providing translations of key terms and phrases—a key aspect of terminology management, the topic of the next section.

Example: At a software company, the development team uses technical language that the sales team does not, which often leads to misunderstandings and lost sales opportunities. The company decides to create a corporate dictionary so the sales team can understand the language used by the development team. This results in improved collaboration, more effective communication, and increased sales.

Example of a Corporate Dictionary in Technical Communication

Below is a mock corporate dictionary for the University of Central Florida.

Term: Burnett Honors College (BHC)
Definition: A college within the university that offers specialized academic programs for high-achieving students.
Usage: The Burnett Honors College provides a unique and challenging academic experience for students, with opportunities for research and study abroad.
Approved Alternative Terms: Honors College

Term: EXCEL
Definition: A program for students in science, technology, engineering, or mathematics disciplines that provides specialized academic support and professional development

opportunities.
Usage: EXCEL helps students succeed academically and professionally through mentoring, tutoring, and career readiness programs.
Approved Alternative Terms: None

Term: Golden Rule
Definition: The university's code of conduct, which outlines the expectations for behavior and treatment of others within the UCF community.
Usage: The Golden Rule is a fundamental principle that guides the conduct of UCF students, faculty, and staff.
Approved Alternative Terms: Code of Conduct, Student Code of Conduct

Term: Knights
Definition: The name of the university's official athletic teams.
Usage: The UCF Knights football team has won multiple conference championships and has competed in several bowl games.
Approved Alternative Terms: None

Term: myKnight Audit
Definition: A report that outlines a student's progress towards fulfilling degree requirements.
Usage: The myKnight Audit is a helpful tool for students to track their progress and ensure they are on track for graduation.
Approved Alternative Terms: Degree Audit

Term: Pegasus
Definition: The university's official symbol and mascot.
Usage: The Pegasus statue in the center of campus is a popular gathering place for students and visitors.
Approved Alternative Terms: None

Term: President's Honor Roll
Definition: A recognition of academic achievement for undergraduate students who earn a 4.0 GPA and complete 12 or more hours during a given academic term.
Usage: The President's Honor Roll is announced each semester and is noted on the student's official transcript.
Approved Alternative Terms: President's List

Term: UCF Emergency Alert
Definition: The university's emergency notification system used to inform students, faculty, and staff of any imminent threat to campus safety.
Usage: The UCF Emergency Alert sends text messages, emails, and phone calls to registered

individuals in case of an emergency.
Approved Alternative Terms: UCF Alert

Term: Undergraduate Catalog
Definition: A comprehensive guide to the university's undergraduate programs, policies, and procedures.
Usage: Students can use the Undergraduate Catalog to learn more about the requirements for their program of study.
Approved Alternative Terms: None

Term: Webcourses
Definition: The university's online learning management system for courses.
Usage: Students can access their course materials and assignments through Webcourses.
Approved Alternative Terms: Webcourses@UCF, Canvas

Terminology Management

Terminology management is the process of documenting terms in a systematic and orderly manner. To facilitate the accurate use of technical content, it can include creating a list of terms and their definitions, along with their equivalents in a brand's target languages. This eliminates guesswork for linguists and reduces the time they spend answering queries ("Terminology Management"). The purpose of terminology management is to ensure consistent use of terminology across all communications.

Unlike corporate dictionaries, which focus on internal language as a whole, terminology management focuses specifically on the use and translation of technical terms within an organization or industry. It can be more detailed than corporate dictionaries—for example, it can include diagrams showing the relationships between different terms—and is particularly useful for technical communicators who work with highly specialized language.

Process of Terminology Management

The processes involved in terminology management can be generalized into the following five steps:

1. **Decide the Terminology Management System (TMS):** Decide what kind of TMS will be used. This can be as simple as a glossary or a more complex, advanced program, examples of which are described in the next section on terminology management tools.
2. **Identify the Key Terms:** Isolate the most important terms that require documentation. This can be done by looking at the frequency of terms in existing communications or the degree of specialization of certain terms.

3. **Define the Terms:** Once the key terms are identified, they must be defined. Definitions should be clear, concise, and provide enough information for translators to understand the meaning of the term.
4. **Create a Termbase:** Store the terms in a termbase, which is a multilingual database that contains terminology, its translations, and associated metadata, such as definitions or usage rules ("What Is Terminology Management?").
5. **Implement the Terminology:** Once created, the termbase must be implemented. This involves migrating the termbase to the TMS chosen in the first step, training translators and technical communicators on the TMS, and ensuring that translators and technical communicators actually use the terminology.

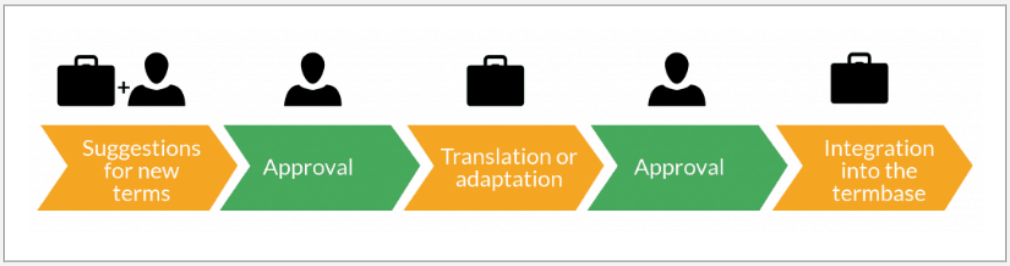

Figure 7. Terminology Management
This figure illustrates the process of terminology management. (Source: "Your Company Should Manage Its Terminology")

Terminology Management Tools

There are several tools available to help manage terminology, including

- A **TMS**, mentioned in the previous section, is a software application that allows companies to manage their terminology in a central location. This tool helps ensure that everyone in an organization uses the same terminology consistently, reducing the risk of errors and misunderstandings.

  Examples: AnyLexic, QTerm, and MultiTerm

- **Translation memory** is a database used in the localization process to store translations of previously translated content ("What Is Translation Memory?"). This software is helpful when translating large volumes of content, as it can identify previously translated terms and suggest translations.

> **Examples:** memoQ, OmegaT, and Pairaphrase

- **Computer-assisted translation tools**, which can even include terminology management tools and translation memory software, help translators work more efficiently by automating certain tasks.

> **Examples:** Redokun, Smartcat, and TextUnited

- **Natural language processing tools** can automatically identify and extract terms from unstructured data sources, such as social media feeds and customer feedback.

> **Examples:** IBM Watson, Google Cloud Natural Language API, and MonkeyLearn

Importance of Terminology Management in Localization and Technical Communication

Terminology management is a crucial aspect of localization and technical communication, especially when dealing with highly specialized content. The importance of terminology management in these areas is discussed below.

Facilitating Accurate Translation

Specialized terminology can be difficult to translate, especially when there are no clear equivalents in the target language. Without proper terminology management, translators may resort to using different terms or phrases to convey a single meaning. This can have a significant impact on the accuracy of the translation and lead to misinterpretations, errors, or even legal issues. With terminology management that includes approved terms and their translations, translators have a clear reference to follow and are able to maintain consistency across all communications.

Creating Positive Customer Experiences

When a brand's communications are clear, concise, and consistent, customers are more likely to understand the information and use the product or service effectively. This can lead to increased customer satisfaction and loyalty, as well as positive word-of-mouth recommendations ("Your Company Should Manage Its Terminology").

Furthermore, consistent terminology helps strengthen brand identity by creating a sense of familiarity with customers, who are more likely to perceive the company as organized and trustworthy.

Example: A software company launches a new product for which it uses consistent terminology across all communication channels, including user guides and customer support. Customers find the product easier to understand, resulting in positive reviews and increased brand recognition.

Improving User Understanding

Terminology management is essential in many industries, where jargon and technical language can be a barrier to effective communication. When terms are clearly defined and used consistently throughout communications, users can more easily understand and apply the content to their needs. This is especially true in industries such as healthcare and law, where using the wrong terminology can have severe consequences.

Example: A user is troubleshooting a problem with their smartphone. If the terminology used in the troubleshooting guide matches the terminology used in the smartphone's user guide, the user will more easily understand and solve the problem.

Reducing Costs

Inconsistent use of terminology can lead to translation delays and additional time and effort spent correcting errors. By using consistent terminology, technical communicators can reduce the resources required for translation, which can ultimately result in cost savings. Effective terminology management can also reduce the likelihood of costly legal and regulatory issues.

Conclusion

Brand identity plays a critical role in how a company is perceived by consumers. To technically communicate and uphold the company's desired brand identity, technical communicators use company-specific language, or terminology that is unique to the company. Careful selection of language and style across various communication channels helps reinforce these two elements of technical communication.

Technical communicators use several tools, including style guides, corporate dictionaries, and terminology management, to control tone and voice while avoiding jargon in communication materials. When all of these aspects of brand identity and company-specific language are aligned, technical communicators can establish a cohesive, outward-facing image to stakeholders that accurately represents the brand's values and goals.

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