E 303: TECHNICAL WRITING

School of Literature and Languages
Louisiana Tech University

Lecture 4a Memo

To: Mr. Merchant's English 303 students
From: Mr. David M. Merchant, English Instructor
Subject: Lecture 4a: The Importance of Good Document Design
Date: March 20, 2020

The purpose of this memo is to give a discussion of the importance of good document design.

Overview of Technical Document Design

Technical communication needs to be effective for both internal communications and crucial external communications (for example, business partners and customers). Readers of technical documents need to quickly navigate corporate documents to find the information they need and, once found, to easily understand what they read. This is especially true for international or busy readers.

Thus, technical documents must be easy to use, efficient, and professional in appearance. This requires good use of plain and simple style (including tightly focused paragraphs), open and airy design making good use of margins and white space, consistent use of distinct headings that make document organization easy to see and follow, tightly written paragraphs, integrated graphics, and otherwise follows Markel's Eight Measures of Excellence.

Poorly designed documents can be confusing, difficult, and tiresome to read; such documents are inefficient and reflect badly not only on the writer but on the writer's employer as well. Poorly designed documents can result in the loss of a customer or the writer's promotion or job; they can even cause damage to equipment or loss of life.

Long Paragraphs

Long paragraphs are not only more difficult to read, but are also intimidating, giving a negative psychological or subconscious effect to your document. Your document looks laborious and tiresome; it looks like a wordy document even if it actually has concise wording. Long paragraphs are also harder for a reader to skim and scan as they search for information. Paragraphs should be tightly focused on a single topic. Compare Paragraphs Example 1 to Paragraphs Example 2 below.

Paragraphs Example 1

Pulp and paper production is not something new to the world of industry; however, it is not a process that many see as a lucrative market. This production process does produce paper as their main product, but there is also a recovery process that takes place producing energy for the mill and marketable byproducts. Black liquor soap (also called tall oil soap) is the byproduct from using pine trees and other softwoods as a reactant with white liquor, heat, and pressure during the Kraft pulping process. Black liquor soap is a mixture of sodium salts and other neutral materials that are dissolved in spent black liquor. Black liquor is the product that mills convert back to white liquor through a clarifying process where it is burned in the recovery boilers to produce steam used in the papermaking process as a source of power. To yield the highest production of energy from the black liquor, the removal of black liquor soap must be at its highest. This process (shown in Figure 2 below) occurs best at 25 percent solids, or weak black liquor (water and black liquor soap), directly after the washing phase. If the soap content is high leading into the evaporators (a process where water is removed), the soap will essentially solidify on the surfaces of the evaporators. When this occurs, it is called calcium scaling, which reduces the surface area for heat transfer in the evaporators. The reduced surface area in the evaporators leads to diminished heat transfer coefficients and decreases the steam production. The decreased steam production will in-turn cause the mill to buy more energy instead of generating its own from burning heavy black liquor (the liquor after the evaporators).

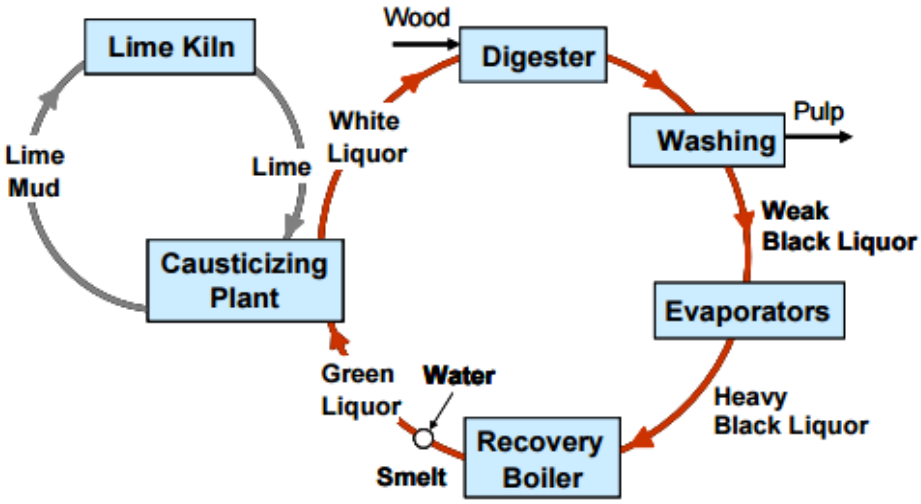

Figure 2. The Kraft Recovery Process

Source: Vakkilainnen, Esa K., and Honghi Tran. "The Kraft Chemical Recovery Process." *TAPPI*, 2007, www.tappi.org.

Paragraphs Example 2

Pulp and paper production is not something new to the world of industry; however, it is not a process that many see as a lucrative market. This production process does produce paper as their main product, but there is also a recovery process that takes place producing energy for the mill and marketable byproducts.

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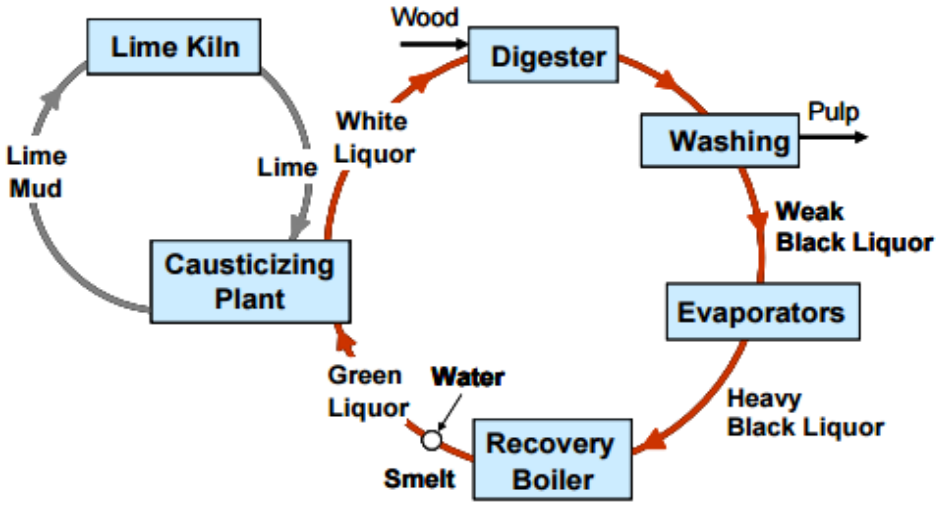

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The decreased steam production will in-turn cause the mill to buy more energy instead of generating its own from burning heavy black liquor (the liquor after the evaporators).

Example 2 is far easier to skim and scan than Example 1. By scanning topic sentences of the smaller paragraphs, a reader can more quickly hone in on information they need or are interested

in. However, while Paragraphs Example 2 is better, more explanation of the illustration in the text is needed. For example, what is a lime Kiln; what is green liquor?

Muddled References

Since technical document readers are skimming, scanning, or busy, reference lists need to be easy for readers to quickly find reference items. Plus, a sloppy reference list reflects badly on the writer and, by extension, the organization they work for. Compare Reference List Example 1 to Reference List Example 2 below.

Reference List Example 1

Foran, C. Douglas. "Tall Oil Soap Recovery." *TAPPI*, 2006, www.tappi.org/content/events/08kros/manuscripts/3-7.pdf.

Vakkilainnen, Esa K., and Honghi Tran. "The Kraft Chemical Recovery Process." *TAPPI*, 2007. www.tappi.org/content/events/08kros/manuscripts/1-1.pdf.

Morris, Charles. "Is Your Recovery Process Up To Snuff?" *PPI: Pulp & Paper International* 57.3 (2015): 30-3, *Business Source Complete*.

Mercier, Beatrice, Josiane Prost, and Michel Prost. "The Essential Oil of Turpentine and Its Major Volatile Fraction (A- AND ²-PINENES): A Review." *International Journal of Occupational Medicine & Environmental Health* 22.4 (2009): 331-342, *Academic Search Complete*.

Reference List Example 2

Foran, C. Douglas. "Tall Oil Soap Recovery." *TAPPI*, 2006, www.tappi.org/content/events/08kros/manuscripts/3-7.pdf.

Mercier, Beatrice, Josiane Prost, and Michel Prost. "The Essential Oil of Turpentine and Its Major Volatile Fraction (A- AND ²-PINENES): A Review." *International Journal of Occupational Medicine & Environmental Health* 22.4 (2009): 331-342, *Academic Search Complete*.

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Vakkilainnen, Esa K., and Honghi Tran. "The Kraft Chemical Recovery Process." *TAPPI*, 2007. www.tappi.org/content/events/08kros/manuscripts/1-1.pdf.

Reference List Example 2 is far easier to read and to find a specific reference item than Example 1. Reference List Example 1 has many formatting/design problems that make it more difficult to use. A major issue is that the list is not in alphabetical order, forcing a reader to have to look at each entry to search for the one they want. In alphabetical order, a reader can just skim until they notice they are in the part of the alphabet where the cite they are looking for fits in. For documents with large reference lists, this can be especially annoying. Next, the entries are not

separated by blank lines, making scanning the list even harder. Finally, the entries are not using hanging indents which also increases the difficulty for quickly scanning.

Reference List Example 1 has other common errors. The Foran entry has the URL text hyperlinked: it is blue and underlined which makes the link address stand out. This is fine if the document is a web document. But for print, it is better to remove the hyperlink, especially if you are being inconsistent in which address texts are linked. The Morris entry is in dark gray text, not black. This happens frequently when you copy and paste a reference from one source (a library database or online citation generator) to your paper. The Vakkilainnen entry is in Calibri instead of Times New Roman which also can happen when you copy and paste.

Overall, the reference list in Reference List Example 1is ugly: it is unprofessional and difficult to use, bringing down the ethos of your document. (Ethos means, in this context, trustworthiness: can the reader trust a writer who appears to be not committed, interested, or otherwise caring about their work?)

Muddled Hierarchies

A repeated theme in approaches to document design and writing in technical writing is to make the document easy to follow, easy to read, easy to understand—at least as easy as you can. Remember Nathaniel Hawthorne's quote: *"Easy reading is damned hard writing."* Your job is to make reading easy.

One way to make reading easy is to make sure your hierarchies are logical: level-1 divisions are logically ordered with subdivisions also logically ordered. This includes making sure you format the level headings correctly. If you format one of your level-1 headings similar to a level-2 heading, for example, that breaks the hierarchy, breaks the logic, muddling the organization and possibly confusing the reader. Compare Hierarchical Example 1 to Hierarchical Example 2 below.

Hierarchical Example 1
Depression: Like Stress, Only Worse **Seasonal Affective Disorder (SAD) Perinatal Depression** **Bipolar Disorder** **Psychotic Depression** **Persistent Depressive Disorder (PDD)**

Hierarchical Example 2
Depression: Like Stress, Only Worse **Seasonal Affective Disorder (SAD) Perinatal Depression** **Bipolar Disorder** **Psychotic Depression** **Persistent Depressive Disorder (PDD)**

In Hierarchical Example 1, the heading formatting tells the reader that the bipolar disorder, psychotic depression, and persistent depressive disorder sections are all subsections of the seasonal affective disorder (SAD) perinatal depression section. But they are not. This is inaccurate and confusing, even if only momentarily so. Remember, your audience probably does not understand the topic as you do and so can be misled by erroneous hierarchies where you would not be. You are not writing for you; you are writing for your audience.

Line Spacing

A professional document is judged by its looks. A sloppy document, even if just parts, gives the impression (right or wrong) that you do not care about the purpose of your writing; it can, thus, also give the impression that you are not trustworthy. Line spacing is affected by font size, line spacing options, and whether spacing is added before or after paragraphs. Inconsistencies in those choices create a sloppy document. Compare Line Spacing Example 1 to Line Spacing Example 2 below.

Line Spacing Example 1

Summary

Radio telescopes are the backbone of radio astronomy, which studies astronomical objects at radio frequencies. Radio telescopes resolve radio signals with very small wavelengths; therefore, they must be very large to achieve a high angular resolution. Radio telescope technology is related to many fields of study and will provide sizeable benefits to students at Louisiana Tech.

Louisiana Tech has an opportunity to build its own radio telescope. This radio telescope will serve many functions, such as providing hands-on experience to students interested in or studying radio astronomy, signal processing, or physics.

If approved, I will conduct further research into the costs and benefits of this project as well as information regarding available radio telescopes and their qualities. Interviews with faculty from the departments of physics and electrical engineering will be sought out. Next, I will perform a criteria analysis to choose a solution followed by a feasibility test to ensure the chosen solution is feasible. Last, I will write a white paper compiling the results of the research and recommend a solution to this opportunity.

I am a junior studying electrical engineering with a concentration in signal processing at Louisiana Tech. I also have a minor in computer science. Other relevant qualifications are presented in the experiences and qualifications section.

By building its own radio telescope, Louisiana Tech will offer many new opportunities to students that were not available before.

Line Spacing Example 2

Summary

Radio telescopes are the backbone of radio astronomy, which studies astronomical objects at radio frequencies. Radio telescopes resolve radio signals with very small wavelengths; therefore, they must be very large to achieve a high angular resolution. Radio telescope technology is related to many fields of study and will provide sizeable benefits to students at Louisiana Tech.

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Example 2's line spacing is professionally, neatly, consistently applied; Example 1's line spacing is unprofessional, sloppy, and inconsistently applied. In Example 1, the level-1 heading has too much spacing after it (it has an Arial, size 14 blank line after it instead of a Times New Roman, size 12 blank line). This is a common error (caused by the writer hitting the enter key after writing the level-1 heading text without changing the resulting line to the correct size). The first, third, and fifth paragraphs in Example 1 are all correct: font-size 12 text with single spacing and no extra spacing before or after the paragraphs. The second paragraph has font-size 12 text but with 1.5 line spacing; the 1.5 line spacing not only increases the spacing between the lines in the paragraph but also increases the spacing between the second and third paragraphs, making that spacing too large. The fourth paragraph has font-size 11 text with single line spacing but also extra spacing (6 pts) after the paragraph. The smaller font size in the fourth paragraph makes the line spacing a little smaller, and the extra spacing after the paragraph gives too much spacing between the fourth and fifth paragraphs.

Final Thoughts

These are not the only ways a document can have bad design. You must follow the house style guide when writing documents for your organization. If your organization does not have one or cares about which style you use, you at least need to be consistent in what style you adopt. You are creating a user interface to your documents and consistency is important; do not make a reader have to adapt to a new interface each time they read one of your documents. Be professional in your professional writing.

Unprofessional documents, documents that are disorganized or muddled marks you as an uncaring writer or one not able to pay attention to details, which can lower your ethos, your document's ethos, and, by extension, your department's or organization's ethos. For example, in a proposal, can the reader trust you to follow through with the job; in a white paper, can the reader trust that you did due diligence in researching your topic and, by extension, trust your recommendation, your sales pitch, or your call to action?

Remember that some of your readers may be global readers: that is, English is not their first language, yet they need to understand your document to make a decision or perform an action. Your document is a professional document, often representing your organization, and so needs to be professionally written, professionally designed.

Also, remember that part of professionally writing a document is to have a good command of the English language: correct grammar, correct punctuation, and correct spelling. These also make a document easier to read, easier to understand, and easier to translate, as well as increasing your ethos.

Closing

If you have questions, please contact me via email or the course Moodle page (forum or messaging service). Do not forget to do your assigned readings and to read *Merchant's Style Guide* located at davidmmerchant.com/style-guide/and refer to it as you write.